AUSTRALIA Freewheeling

SUMMER 1977-78

$1.00*

THE BICYCLE INSTITUTE OF NSW

After many years in the doldrums, cyclists are once again taking to the roads, not only for recreation, but more importantly for transport.

The trend coincides with a marked deterioration in the utility of the car for city transportation: intolerable traffic congestion, high levels of pollution, escalating costs, wasteful use of fuel and materials, and the tragic accident rate.

By contrast, bicycles can avoid traffic congestion, are non-polluting, cheap, economic in their use of materials and space, require no fuel, and provide the opportunity for regular exercise for an increasingly sedentary society.

Admittedly there are some drawbacks: only reasonably fit people are interested in riding bicycles and bad weather lessens the appeal. But for a large section of the population it offers tremendous scope as an alternative means of travel.

But the number of people using bicycles for transport remains small compared to the number using them for weekend recreation.

Cycling on Sydney roads is dangerous. The traffic is heavy and unsympathetic; the pollution high and the pot holes deep.

The main aim of the Bicycle Institute of NSW is to inform and to demonstrate the benefits of cycling, and to press for better facilities for cyclists.

While the Institute encourages all forms of cycling it knows the mistake made in America, where many bicycle routes have been installed solely for recreation and making no contribution to solving urban transport problems.

The main facilities required to encourage cycling are cycle routes, including separate paths, cycle lanes on roads and 'sloways' (residential streets with speed limits). Airlines, railways and bus-lines need to be encouraged to transport bicycles efficiently at special rates. Secure cycle racks are needed at shops and public transport stations. In this area, the City Council has taken a lead and bicycles can be 'parked' free at any of the Council parking stations.

Because of the relatively small number of cyclists brave enough to risk using roads at present, opponents of the bicycle claim there is a lack of demand for expenditure on cycle facilities, especially when there is a shortage of public funds.

But it is time our politicians took a forward-looking attitude towards transport and recognised that cycling is sensible. Only when cycling is made safe will it be possible to test whether there is a significant demand for cycle routes.

The Bicycle Institute of NSW can be contacted c/o NSW Environment Centre, 399 Pitt Street, phone 233 5388.

Most of the unacknowledged photographs appearing in this issue are by Warren.

BICYCLE GROUPS

State Wide Groups

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The Cyclists Protection Association of South Australia Inc.
PO Box 132
St. Agnes. SA. 5097
Phone 263 4031

Pedal Power ACT Inc.
PO Box E305
Canberra. ACT' 2600

Pedal Power Tasmania Inc.
102 Bathurst St.,
Hobart. Tasmania 7000

NSW Groups

Cyclists Action Group
The Environment Centre
399 Pitt St.,
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NSW Amateur Bicycle Federation,
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Wheelmans Club of NSW
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Freewheeling Australia

Welcome to Freewheeling Australia. Contributions of articles with graphics and photographs, trip reports of areas of interest, cycling photographs and information and articles relating to cycling as a sport are welcome and will be greatfully acknowledged.

Letters to the editors and questions and queries concerned with bicycle mechanics and maintenance for a technical column are welcome for the next issue.

Advertisements and subscriptions are welcome. Advertising rates are available from the publisher. Subscriptions are on a single issue basis and are the RRP including postage. (1 issue $1.00, 2 issues $2.00 and so on). Please write to publisher enclosing cheque/money order and stating number of copies requires for subscription.

This issue was made possible by a loose collective of people consisting of Charlie Vassel, Geanie Malone, Sally Matthews and Warren Salomon with much help, encouragement and feedback from their friends.

The contributors for this issue come from various parts of the country. They are all in some way involved in a wide promotion of the bicycle. All are regular cyclists.

Allan Parker has been involved with the Bicycle Institue of Victoria since its formation. He is presently Honorary Research Officer.

Chas Coin lives in Newcastle and is an executive officer with the Newcastle Cycleways Movement. His involvement and experience in the area of safety spans many years.

Sally Matthews is an experienced long distance cyclist who is currently studying at Sydney University.

Charles Vassel is an active member of the BINSW and has been a cycling enthusiast for many years.

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Published by: Freewheeling Australia Publications
PO Box 57, Broadway, NSW. 2007

Typeset by: Gay Kalnins 660 0037
Printed by: Thumb Print, 5 Knox St.,
Chippendale, NSW. 2008

Next issue due: Autumn 1978

Cover: The awe and spectacle of the rain forest from a bicycle. On tour in NQ - Danbullah SF See article on page 21.

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ABOVE SEA LEVEL

All cycling is recreational by definition

by Alan A. Parker

Historical

Adult cycling in Australia has never been a major recreational activity in the past as it was in Western Europe although cycle racing has been very popular for over seventy years. Casual recreational cycling near where people live or cycle touring as a club or private activity has only in the last two years become more than the pastime of a tiny minority and even this increase is not uniform throughout Australia due to variations in the public acceptability of cycling and to topographic factors. There is an increase in bicycle usage throughout all of Australia, but the rates of increase of usage vary considerably. The open-e ended rectangular street grid in many Australian cities that are also undulating or flat, is ideal for cycling and in these places cycling for many purposes including casual recreation is very much on the increase.

Climate and Terrain

Terrain and the limitations it imposes on the road system seem to have an appreciable effect on the increasing rates of usage. For instance in those areas of Sydney with a predominantly middle class population, such as the coastal suburbs where there are steep hills, cycling has been much slower to catch on. The steep hills not only require the more expensive low geared bicycles to climb them, they require more physical effort especially in the heat of summer) and there are few alternative routes to be found in the residential street network because the main arterial roads follow the less steep routes with minimum inclines along the ridges of the hills.

Melbourne has a more favourable terrain and in the Melbourne Bikeway Plan* it was stated . . . *as only approximately 5% of the urbanised area is too hilly for easy cycling, and a as the climate allows cycling to be a year-round activity, Melbourne is a suitable city in which to develop a bicycle path network.*

With the exception of Canberra and Hobart which are subject to frost, a common cause of bicycle accidents in Europe, all Australian Capital cities have favourable climates for year- round bicycling. Rain is not really a problem for those equipped with modern water-proofs and provided that such accessories are readily available rain should not act as deterrent to year round cycling in the long term.

The 'Melbourne Bikeway Plan' estimated that there are between 450 000 and 500 000 cyclists in Melbourne who are *far from being an insignificant minority.* It is true that most of these cyclists are children or young adults but in five years time the indications are that many of these people will still be cycling.

Steadily Increasing Usage

The sales of bicycles are increasing steadily in Australia and this trend will continue. However, the most significant factor is not how many bicycles are sold but who is buying them. The most significant factor, as far as future trends are concerned is that it is the middle class trendies and their offspring who are the pace setters in the revival of cycling. This was just the situation during the early stages of the American boom in bicycle usage. There was a boom and bust situation in American bicycles sales with sales peaking at 15½ million in 1973 and dropping to 7½ million in 1975. However, the increase in the usage of bicycles continues to increase in the USA with over 100 million Americans now in possession of bicycles and many regularly using them.

In Australia there were 116 000 bicycles sold in 1969/70 and 302 000 were sold in 1976/75 and the predictions for the future are a steady increase in sales. However, it is not known to what extent the new bicycles being sold are being used and what the future potential for bicycle usage really is. This will depend on many factors, one of the most important of which is the removal of deterrents to bicycle usage by sensible planning measures.

There are many reasons for believing that recreational cycling will become, or to be more precise, has the unique potential to become a major recreational activity in Australia and that this pattern of recreational development could be similar to that recently experienced in parts of the USA, particular California. The persistent 10 year long increase in US bicycle usage is one of the most interesting social phenomena in the western world because it crystallises in a visible human activity, deep underlying changes in attitude and values in American society.

The world wide resurgence of interest in two wheel vehicles in general is also of interest but its relevance to Australia is more diffuse and less direct than the rapid and sustained growth in bicycle usage in California and those other US states with climates most similar to Australia which have had an extraordinary growth rate in bicycle usage well ahead of the American average. For instance, California has now 8 million registered cyclists and the growth of both informal and formal recreational development is proceeding at an equally extraordinary rate.

What needs to be emphasised is that in trying to forsee and plan for the development of recreational cycling it is important to study a relevant foreign model so that mistakes can be avoided in planning for cyclists needs in Australia. Furthermore it would appear that California is such an ideal model.

All Cycling is Recreational

Perhaps the greatest impediment in generating more bicycle usage in the USA and California was the initial lack of understanding by the authorities that cycling is like driving in one important respect which is, that for the recreational benefits to be obtained it must be regarded as a multi-purpose activity. This impediment has now been overcome and it is now realised that just as the majority of people who use cars do so because they are versatile machines that can be used for all kinds of things, bicycles can be used likewise. They are not as versatile as cars but they have one cardinal virtue, they allow people who use them to take exercise at the same time as going somewhere.

By definition all cycling for whatever purpose is recreational if we use the criterion of exercise by which to evaluate cycling.

This broader concept of recreational cycling is similar to that put forward by the Victorian Department of Youth Sport and Recreation's *Life be in it* campaign which emphasises through media advertising that to take exercise for most people does not require elaborate exercise programmes or sports stadiums, but merely a common sense approach to life so that the individual chooses to use his/her own physical effort to do things, instead of using powered machines or hiring someone to do the physical work.

*Study done for the Department of Youth, Sport and Recreation by the Department of Environmental Studies at the Melbourne University.

The Institutional Deterrent to Cycling

From a planning viewpoint the primary deterrent to the development of recreational cycling in Australia is that the road authorities have for twenty years ignored the needs of cyclists and only now are beginning to consider their rights as road users. Until such time as the cyclist is better catered for by the provision of bikeway networks in the cities the real recreational value of the bicycle will never be realised and any isolated recreational programme for cyclists rendered largely inneffective because most people will not cycle regularly until something is done about the road system.

In California and Oregon the highways divisions do accept their responsibilities towards cyclists and are cleaning up the road system for their benefit. They are providing, as will be shown later, a foundation upon which other government agencies can concentrate on recreational cycling in the narrower meaning of the term.

To be realistic we must recognise that in this time scarce society of ours the only way that most people will be able to get regular exercise is if they can be induced to get out of their cars and use bicycles for at least some of the travelling they now do by car. The only way that this can be done is to create the means whereby bicycles can be safely used for purposeful reasons on a daily basis on the roads.

Urban Bikeway Networks and Rural Route Guides

Cyclists need bicycle paths but they must be part of a planned on street system of bikeways so that the pathway may be used to bypass dangerous traffic conditions or to provide a short cut relative to motoring. Bicycle paths that come from nowhere and go to nowhere are not required.

Above all, in the urban areas, they need a bikeway network of sufficient quality utilising the great mileage of quiet residential streets to get around on, backed up by adequate education programs to enable both cyclists and motorists to co-exist on the existing road system into which the bikeway network must be safely integrated.

In the rural areas the immense network of little used roads needs to be mapped and inventoried in such a way that cyclists have usable route guides to enable them to go where they want and avoid dangerous traffic conditions. The potential for implementing these two general policies can be readily seen from the data about roads sutiable for mixed bicycle/car traffic, in the following charts. The connection between these two policies is very direct, because most cyclists will find long weekend rides very tiring if they cannot keep fit by riding to work, school, or in the evening during the week.

Some cyclists will, of course, cycle on any road regardless of the conditions of the outside lane, but such recklessness will not appeal to experienced tourists who know the risks. Outside lanes that are not wide enough to allow cyclists to ride near the left edge and allow cars to pass without moving over into another lane, particularly ones with oncoming traffic — are dangerous in even moderate traffic conditions. Motorists maps only indicate the surface conditions and there is no way of telling from these maps when the ouside lane is dangerously narrow. These roads are even more dangerous when there are cyclists riding in both directions. The road building authorities know the condition of all roads and this is another compelling reason why they should be responsible for safe route planning.

The Bicycle Institute of Victoria is lobbying the Country Roads Board so that it will use its road information to prepare recommended bicycle route maps in Victoria, and in time most Australian cycling groups will be doing the same in every state.

MILES OF RESIDENTIAL ROADS without much traffic

MAJOR CITY. BUILT UP AREA ONLY	LESS THAN 1500 VEHICLES PER DAY(SEALED SURFACE OF ADEQUATE WIDTH)
Melbourne	3,600 Miles
Geelong	180 "
Sydney	3,510 "
Newcastle	320 "
Wollongong	110 "
Brisbane	1,220 "
Adelaide	1,520 "
Perth	1,210 "
Hobart	200 "
Canberra	290 "
All major cities	12,160 "

MILES OF RURAL ROADS without much traffic

TRAFFIC / STATE	LESS THAN 1,000 CARS PER DAY ON SEALED RDS	LESS THAN 100 VEHICLES PER DAY			
		SEALED	GRAVEL	DIRT	TOTAL
VICTORIA	19,000	7,200	25,000	40,000	72,200
N S W	21,000	7,700	34,000	36,000	77,700
QLD	11,500	4,300	13,000	61,000	78,300
SA	5,000	1,800	11,700	34,000	47,500
WA	9,500	3,600	15,300	44,000	62,900
TAS	2,500	800	5,000	300	6,100
AUSTRALIA EXCLUDING NT & ACT	68,500	25,400	104,000	215,300	344,700

As beast-of-burden, commuter transport, child-carrier, even as a 'home-on-wheels' for the lonely swagman, the bicycle is a trusty and long-serving friend

Plenty of Road Space in Australia

There is plenty of road space for cyclists to use in greater safety if the road authorities could get around to the business of planning its use competently.

Not only are there plenty of safe roads in the urban areas and the country, many of these roads are pleasant to ride on, have stimulating roadside scenery and have scenic views. There are forest and mountain trails for bush cyclists and bicycle campers and quiet country roads for the family to ride together. The only problem is they are not shown in convenient form such as maps and books written for the bicyclist as they are in America, Canada and Europe. What is lacking in Australia is not the lack of road space to cycle on, but the lack of back-up facilities to enable the cyclist to use these roads.

The initial work that needs to be done to promote bicycling in the rural areas is largely information gathering and map making work. There are possibly hundreds of thousands of miles of roads suitable for touring, bush bicycling and bicycle camping – the problem is in sorting them out from the roads which are not. Maps designed for motorists are only a guide that often ignore suitable cycling roads.

As in America a lot can be done in the future providing separate bike paths along drainage canals, creek and river flood-plains, disused railway easements, forestry and water catchment area roads, but the necessity to do this is far less in Australia except in the national parks and close to the cities. Australia is unique in that so much tarmac has been used in putting in good roads past farms. These are a great asset to bicyclists and what most people may not realise is that there are already about 68 000 miles of sealed roads, the equivalent of American class III bikeways or bicycle routes, that carry less than 1 000 cars per day. Thanks to the past political power of the Country Party, Australia has the finest network of de facto rural bikeways in the world and all that remains to be done is to map them.

The Current Situation

Meanwhile, if people want to find safe places to bicycle in the rural areas they are going to have to go and find them themselves because no one else is going to find them and map them out in less than three years on an individual basis. It is doubtful, judging by the American touring guides coming onto the market this year that the Australian bicycle industry will have people who will do this job in less than 5 years. The one hope is that the newly formed bicycle touring clubs are systematic in the way they collect and record information about their trips. It should then be possible for bicycle touring clubs to get together and pool their information so that a guide to touring can be produced with the assistance of government agencies concerned with recreation and road planning.

Planning for Cycling in California

The non-motorised section of the Californian Highways Division plays the most important role in encouraging recreational cycling and the role of other government agencies is secondary to this role. It is important that this workable relationship evolved over the last 8 years in California be understood here in Australia because this is the right way to go about planning for cyclists needs on a statewide and federal basis. The non-motorised section operates the largest single bicycle facilities planning and construction enterprise in the Western world and much can be learned from their work.

This major reorientation of planning in California came about early in 1976 and follows two years work by a State Bicycle Committee.

The bikeway as the ultimate solution has been quietly relegated to an equal status with bicycle education and law enforcement and the emphasis is now on making the best use of the existing road system, particularly those roads suitable for mixed traffic.

California's roads are being thoroughly inventoried for present and potential non-motorised routes. Bicycle route touring guides have been distributed to thousands of cyclists and the demand for route maps of this type is increasing. In co-operation with the Californian Department of Parks and Recreation, a statewide system of trails and overnight accommodation is being planned for non-motorised travellers.

The Californian Department of Water Resources has opened up 140 miles of service roads next to the Californian Aqueduct and rest stops with water shade and rest rooms are provided at ten mile intervals along half its length with more facilities planned.

The Californian Highway Patrol has developed and put into effect a bicycle enforcement and education program which has resulted in an 11% reduction in bicycle accidents occurring within their jurisdiction. They have also conducted in-depth studies which reveal that where bicycle laws are enforced, bicycle accidents are reduced. The Californian Department of Transportation (CALTRANS) encourages bicycle use and is developing a non-motorised element in the Californian Transportation plan. The element recognises the importance of the bicycles role as a transportation vehicle on public roads.

The Automobile Club of Southern California has a very extensive bicycle safety education program and some police departments provide bicycle safety education in the schools and to groups of bike riding offenders.

The final report of the Statewide Bicycle Committee of California (SCR-47) outlines the recommendations of that committee to the Californian Senate. The report is 50 pages long and includes recommendations on bicycle operations, equipment, facilities and safety education as well as a model bicycle ordinance for use by local councils and suggestions for changes in the vehicle code regarding rules of the road and safety equipment. Copies of this report are available from the Bicycle Institute of Victoria for $4.

A typical cyclist's route map of the St. Louis USA area demonstrates what can be done to make cyclists more aware of suitable roads to use.

Route Maps for Cyclists

In a letter to this writer from Richard Rogers, the Bicycle Facilities Program Co-ordinator of the Division of Highways in California, he answers the question about why a road authority, such as the Victorian Country Roads Board should accept responsibility for planning for cyclists' needs. The letter states:

> '. . . for a specific need for a Non-motorised Section, bicycles are typically operated on streets and highways and with a combination of bicycle and auto travel, consideration should be given to both these needs. California also encourages bicycling for environmental reasons; it saves fuel resources and does not pollute the atmosphere.'

In the attachment entitled 'Non-motorised program facts' two out of the nine points relate to the provision of route maps:

- CALTRANS provides bicyclists with major corridor maps and route information within individual transportation districts;
- CALTRANS has designated a Pacific Coast Bikecentennial Route to be signed. A bicycling tour guide is being developed.

25 MPH Speed Limit (40 KPH)

California's 7½ million cyclists have always been fortunate because the speed limit is 25 mph in the residential and business districts of cities unless 'otherwise posted'. This originated in a basic concern for pedestrians in California and gives pedestrians and cyclists more decision time to judge traffic conditions and reduces the stopping distance of motor vehicles to one half of what it would be at 60 kph (the prevailing Victorian speed limit).

As most cycling takes place on roads the existence of a base speed limit of 25 mph which cannot be increased unless local councils can get the road redesignated as an arterial road enables Californian cyclists to select routes for themselves through the residential street network that are free from fast moving vehicles.

It is also crucially important because in those cities which have well developed bikeway networks the greatest mileage is on what are termed 'bicycle routes', that is roads with a sign saying 'Bicycle Route' and on which bicycles and cars share the roads. Some signed routes in the vicinity of primary schools will also have an even lower speed limit of 15 mph attached to Bicycle Route signs as well.

Of all the engineering solutions available to improve the safety of bicycling the 25 mph residential speed limit is the most important.

INSTITUTIONAL RESPONSIBILITIES

Bikeways Committee Policy Statement, November 1976

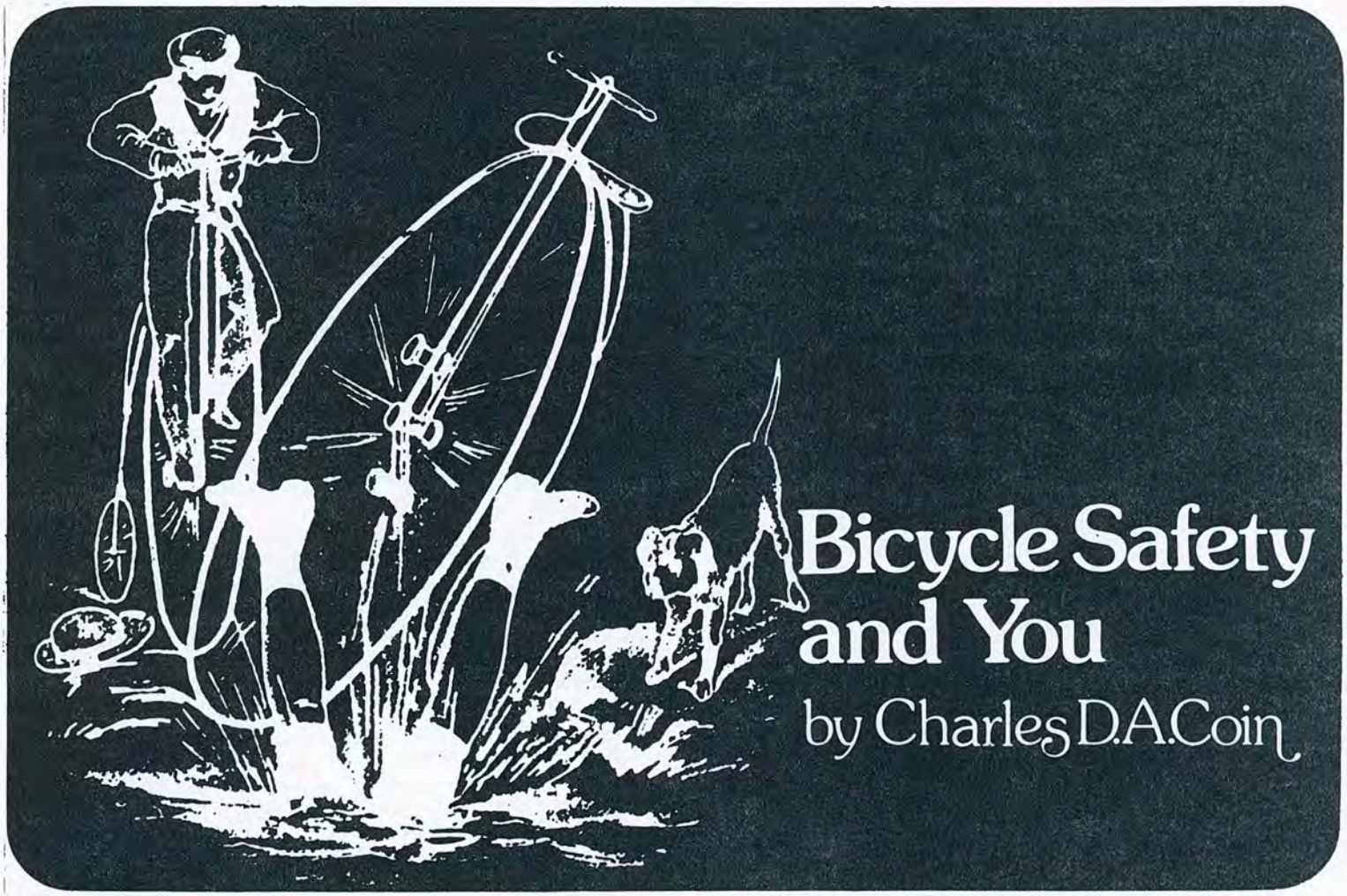
Institutions	Interest	Importance	Direct Responsibilities
Local Councils	Major role with respect to participation, planning & provision of local facilities.	***	Local investigations, planning construction, maintenance & operation of a network of local area cycle ways and parking facilities.
State Governments			
Planning	Consideration of land use implications, ensuring provision for cycle ways in new land developments and from new development to public transport facilities	**	Planning, co-ordination of local plans, development approvals.
Recreation	Cycling can be simultaneously purposeful and recreational or simply great recreation.	*	Recreational bike trails, general policy support.
Health	Cycling is an excellent exercise for all ages.	*	Policy support
Local Government	Ensure that L.G.A's have adequate statutory powers	*	Provision of adequate legislation.
Police	Ensure that cyclists have 'roadworthy' cycles and obey the rules of the road	**	Enforcement of road rules cycle roadworthiness.
Education	Cycling is an excellent form of access to schools and education in safe cycling is good education for motor vehicle operation.	*	Storage facilities for cycles at schools. Education of young cyclists in road rules.
Traffic	Cyclists are legitimate road users with special needs warranting professional attention for special signals, road markings, route maps etc.	**	Education of all cyclists. Provision etc of cycle specific traffic engineering measures.
Roads	To provide an arterial bikeway system.	***	Provision etc, of an arterial network of cycle ways.
Environment	Cycling is non polluting, and is generally a very low impact transport technology.	*	Policy support.
Fuel & Power	Cycle transport uses renewable (food) energy sources thus conserves non renewable resources.	*	Policy support.
Treasury	Should ensure that cyclists get a 'fair share' of public funds	*	Ensure that cycle facilities receive funding and that cycling is encouraged by tax measures.
Public Transport	Enlarging the market for public transport Ten times as many people can have access to public transport by bicycle (in the same time) as a given number can gain access by walking.	**	Provision of parking and mixed mode facilities.
Transport	To ensure that there is 'blaance', co-ordination and co-operation between all modes.	**	Administrative guidelines and transport por program development.
Federal Government			
	As for states and LGA's in the territories. Also have responsibility for:		
	i facilitating exchange of information between the states.	**	Research program
	ii requiring that some federal funds be applied to facilities	***	Administrative guidelines
	iii for defence reasons, to ensure that cycling, a mode of high utility yet low vulnerability, is encouraged. This particularly applied to touring bus & forestry tracks.	**	Policy support

Initiating Change

For the purpose of achieving the recreational and other benefits of cycling it is vital that the long term goals be seen clearly and that the commitment of government agencies at all levels be fully understood. The Bikeways Committee of the Bicycle Institute of Victoria has compiled a chart outlining the institutional responsibilities. An analysis of this chart shows a multi-faceted approach to bicycle facilities planning. Ultimately the delegation of government responsibility in this area will be as shown on the chart.

When agencies responsible for recreation and tourism consider their own contribution to the promotion of cycling it is vital that an overview and long term perspective be maintained when initiating programs.

Perhaps the greatest contribution such agencies can make in providing for cyclists is to draw to the attention of other agencies what their responsibilities should be.



Bicycle Safety and You

by Charles D.A.Coin

Bicycle safety can be divided into three categories. Primary safety deals with aspects that help to avoid dangerous situations. Secondary safety deals with aspects of bicycle design that could lead to unsafe handling and/or provide dangerous and injurious items. Tertiary safety concerns equipment and clothing which serve to minimise personal injury during an accident.

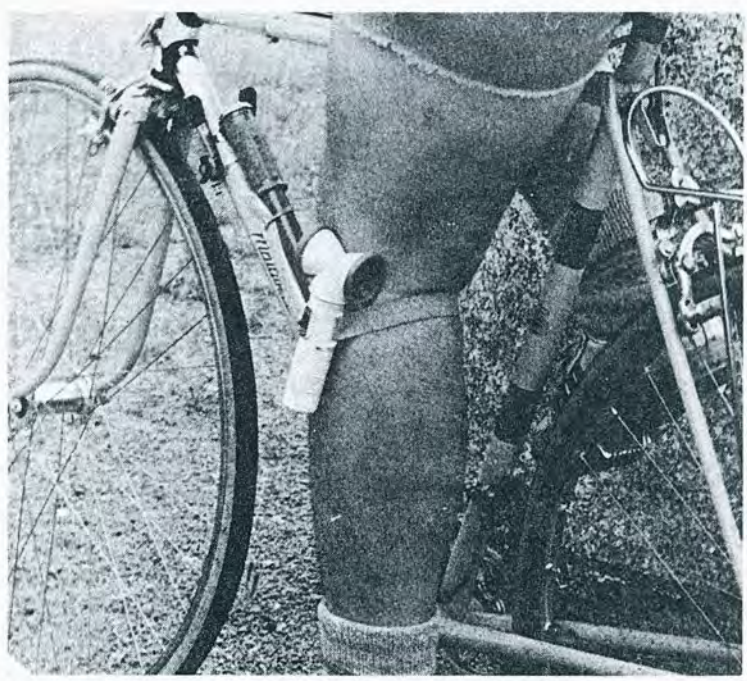
Primary Safety

The inventory of situations that are potentially dangerous is almost endless. Many of these situations involve violation of the road rules that apply to all vehicles. *Defensive driving* techniques are especially applicable to cyclists. For further information on this aspect of bicycle safety, I recommend *Richard's Bicycle Book* (Pan, $3.50) which is available from most booksellers.

One of the primary rules for cyclists is that they should *make sure that they are seen.* Most car drivers have a mental register for motor vehicles – bicycles simply do not register as real vehicles. The plea that *. . . I didn't see him* is all too commonly heard after motor vehicle/bicycle collissions. The remedy for this situation is for the cyclist to be as conspicuous as possible. Wear clothes that contrast in colour with the surroundings. In daylight this means clothes of safety orange or yellow (but not white), and at night, yellow and white are best. Natural colours (green, brown, grey and blue) should be avoided at all times. Anything else to attract attention is a good idea, for example a striped road-worker's vest.

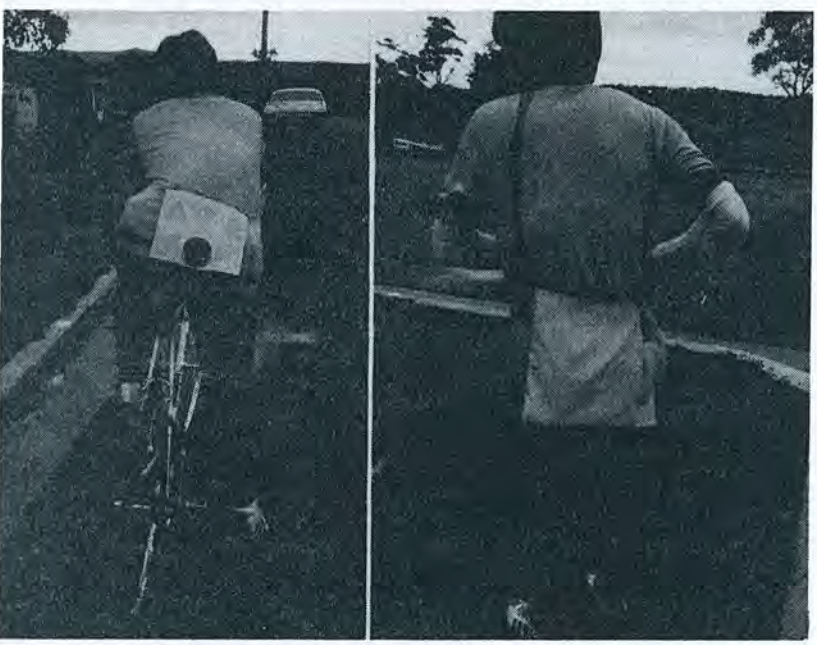
Riding a bicycle at night is a whole world by itself. Good lights are mandatory to see with and to be seen by. The tail light should be as large and conspicuous as possible. A cyclist without a light at night is remarkably invisible.

The choice of lighting depends on a person's riding habits. The selection can be made between 3V and 6V battery systems, tyre dynamo or a hub generator *Dynohub*. However every rider who rides at night should use, in addition to his main lighting, a *leg-light*. These are available at most bicycle shops for around $3.00. These have a red light to the rear and a white light to the front. They strap comfortably just below the knee and they provide a rhythmically moving light which never fails to attract attention.



Another bright idea is to decorate the bicycle with *Scotch reflective* tape (available from some motor accessory shops), paying attention to rear through to side visibility. There is now another reflective material on the market called *Reflexite* (available from Steed Signs*) which surpasses all other reflective material I have tried. It is less pliable than Scotch tape and is not very suitable for mounting directly to the bicycle, although an excellent Reflexite mudguard strip will soon be on the market. One of the most useful items that can be made from Reflexite is a reflective panel. Suitable dimensions are 250 mm by 200 mm. A base is made from cloth-backed upholstery vinyl. Reflexite colours and shapes are attached to the panel. By attaching straps or tabs, the panel can be tied around the waist or pinned to the clothing. Reflexite armbands (also available from Steed) are a useful adjunct. Because of the nature of their movement, pedal reflectors, now quite common on new bicycles, are an excellent idea. A reflective strip down the back of cycling shoes, serves a similar purpose. If a protective helmet is worn, then reflective material on that is also recommended.

*An Adelaide SA company.



L A vinyl patch using refelex ite materials.
R A light coloured cloth bag can be worn to increase visibility.

When loads are to be carried on a bicycle, attention should be paid to the load distribution. It should be evenly balanced, and carried as low as possible. Pannier bags on either side of the rear carrier are the best way of achieving this. A bicycle with a high centre of gravity is very hard to handle, especially in emergencies. If wearing a back-pack whilst cycling, it should be kept as light as possible (both for comfort and stability) and it should be secured so that it cannot swing around the body in any circumstance. If contemplating cycletouring, the bicycle's characteristics should be kept as neutral as possible by balancing the load both sideways and fore and aft by using front and rear panniers and a handlebar bag etc.

Wet weather cycling requires special vigilance.

Firstly: if rim calliper brakes and chromed steel rims are fitted, then at normal speeds the braking distance in the wet will be about five times the braking distance in the dry at the same speed. However, if the bicycle is equipped with the lighter weight aluminium alloy rims, then the braking distance will be the normal dry distance plus the circumference of the wheel. More will be made of this later.

Secondly: and allied to braking, manoeuvrability is decreased in the wet. In this regard, oil slicks, wet leaves, railway lines, road marking paint and even smooth wet concrete are to be treated very circumspectly.

Thirdly: car drivers' visibility is reduced during wet weather and drivers will often find that they are viewing cyclists through the left-hand, unswept portion of the windscreen. This last factor is a good reason for avoiding unpleasant wet weather and utilising alternative means of transport.

SECONDARY SAFETY

Secondary safety concerns bicycle design, manufacture, sales and cycling technique. Aspects of all of these can help to minimise risk in an accident.

Bicycle Design

The basic and gross bicycle design should aim at responsive handling characteristics coupled with a fair measure of stability. These sometimes apparently contradictory features are very difficult to define succinctly. A modern road racing cycle would, in the hands of your aged maiden aunt, feel as dangerous at 10 kph, as your maiden aunt's waterpipe machine in the hands of a racing cyclist descending mountains at up to 80 kph. When buying a bicycle it is best to test various brands and models to ascertain their handling characteristic. *Seek the advice of a reputable dealer* is a good maxim. However, their are too few *reputable* dealers who have enough knowledge of bicycles or who do not have a self-interest in the brands they are selling. Too few dealers ride bicycles and therefore do not know the real differences between one brand and another. It is often best to go to a smaller personalised business which also specialises in equipment for the racing fraternity.

When buying a bicycle, whether new or secondhand, for $10 or $1 000 you will need to check it for basic faults. One of the most common of these is a frame out of alignment (far too common on new bicycles and extremely common on second-hand machines). Apart from *sighting* along the frame, the best way is to ride the bicycle *no-hands* in which case it should steer straight and not dive to one side.

The rider should fit the bicycle and be comfortable on it. Although the bicycle may have a 27" wheel, the frame size (length of seat bar) can vary from 48cm (19½") for people about 157cm (5'2") through to 64cm (25") for people about 195cm (6'3"). Most people buy, or are sold, bicycles which are too big for them. As a test, the rider should be able to straddle the top bar with about an inch clearance whilst both feet are flat on the ground. To buy a bicycle that is too big for a child, on the assumption that the child will *grow into it* is making the child a danger to himself and to others. The saddle should be at the most efficient height and the length of the headstem (the connection to the handlebars) should be selected when the bicycle is bought and should be altered where necessary, to suit the rider's physiology. Do not patronise a bicycle store that will not modify the bicycle to fit the rider.

Fortunately the *hi-riser* style of bicycle is fast becoming obsolete. The design and stability of these bicycles can only be described as attrocious. They have poor steering response and are prone to overturning, both factors being due to the placement of the weight over the rear wheel.

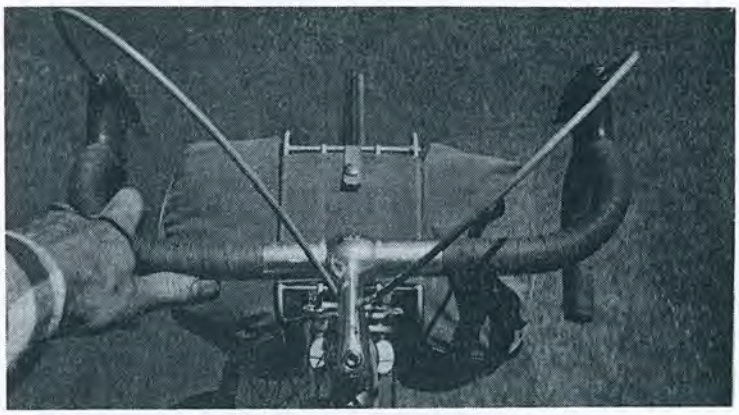
Bicycle Equipment

Handlebars:

Apart from the *ape-hanger* types on children's bicycles, there are two basic types. They are the racing style downturned bars and the flat type on the *sit-up-and-beg* older style bicycles. The latter type I regard as being more dangerous than the racing bars, mainly because both the handlebar ends and the brake levers project toward the rider. Should the bicycle stop and the rider continue forward, then they constitute a serious hazard to the abdominal area. Racing bars do not have this problem as

they are rounded away from the body. Racing bars also give better dynamic stability under manoeuvring and braking as they lower the centre of gravity and are more effective in allowing the rider to use the whole body to control the machine. All handlebars, irrespective of type, should have their ends plugged firmly as in some accidents handlebar ends can act as efficient abdominal *applecorers*.

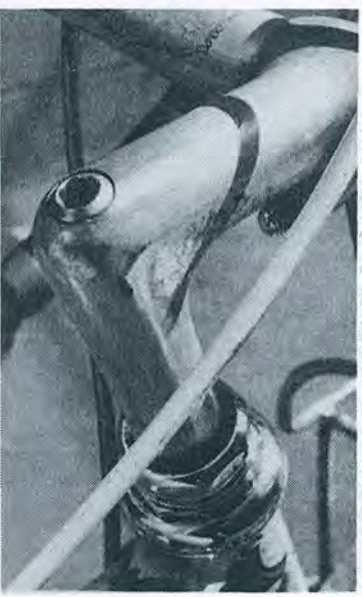
Keep all paraphernalia off the handlebars. This includes bells, horns, lights and the now common headstem mounted gear change levers. All these are well designed to grab or impale the *victim* as he flies across the handelbars. The gear change levers should be mounted on the downtube of the frame.



Keep the handlebars free of protruding objects.

Headstems

Some headstems are made with a sharp rearward projection as well as a substantial expander bolt head. Both of these are on the downward trajectory of the rider's head in many accidents. Other better designed headstems are available, at approximately the same price. These have smooth non-protruding contours and a concealed Allen-key fitting on the expander bolt.



Head stems with recessed hex key type expander bolt.

Brakes

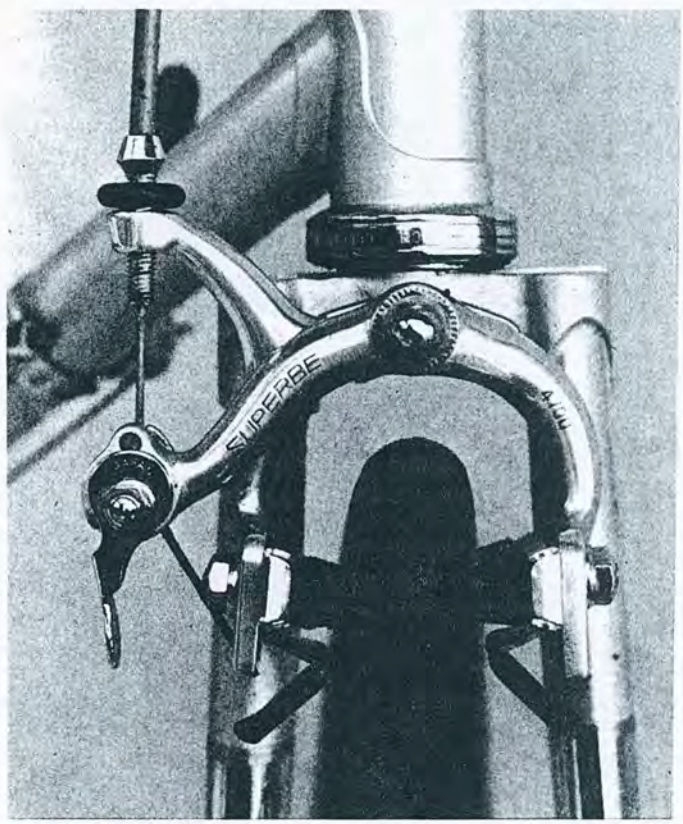
Bicycle rim brakes, on the whole, are excellent and very efficient. In fact as far as weight per unit braking area is concerned they are three times better than the next best vehicle on the road. However, braking distances are far longer than for most vehicles. Unfortunately it is the dynamics and high centre of gravity of the bicycle plus rider which do not allow the brakes to be used to their maximum. If the brakes are used to their limit, then the result sees the bicycle and rider pivoting about the front wheel and the rider going flying over the handlebars. The overall deduction from this is that the best brakes should transmit the best braking *feel* back to the rider. For this reason side-pull calliper brakes are recommended over the centre-pull variety. However the centre-pull type are the most common on 10 speed bicycles in the under $200 category. Because of their design, they are very spongey and hence insensitive. Side-pulls, because of their simplicity, offer the best *feel*.

Design factors aside, brakes should be in good working order with cables smooth running and sound, blocks in good condition, well adjusted and marrying well to the rim. The rims should be of aluminium alloy and *not* chromed steel (see later), with no dents or flat spots. Would you drive a Disc-braked car that had dents in the disc and tended to lock-up any time the brakes were applied?

Most manufacturers supplying bicycles for the 10 speed popular market usually fit *touring levers* or as they are euphemistically called *safety levers* as an addition to the normal levers. These *safety levers* allow braking to be carried out by squeezing the lever parallel to the top bar of the handlebars. They are *grossly* dangerous as they decrease the feel of the brakes by many orders and leave the hands on the handlebars in a position where proper control cannot be maintained. If owning a bicycle with these, then please remove them.

Braking technique is an all-important feature in reducing braking distance. Under heavy braking, the body weight should be consciously transferred toward the rear to provide more weight over the back wheel and lessen the tendency of the bicycle and rider to pivot about the front wheel.

The side pull brake with its simplicity and better handling is superior to the more common centre pull variety.



Rims

As most bicycles today are equipped with rim brakes, it seems unbelievable that manufacturers ignore the nature and quality of their rims. Tests conducted by *Bicycling* magazine (Aug. 1976) showed that at 24kph (15mph) under dry conditions, all brakes stopped the bicycle in about 2m (10'). However under wet conditions the distance expanded to 5–6cm (17–20') with alloy rims and to around 15m (50') for steel rims! With

evidence such as this, how can manufacturers continue to fit steel rims when the cost difference is so small.

Tyres

Both tyres should be sound with no cuts, bulges etc. The *best* tyre should be on the *front* wheel, since a front wheet blow-out is much harder to handle than one in the rear.

Head Steering Bearings

This is an area of the bicycle that is much neglected. Most steering bearing races installed on the common 10 speed bicycles do not last more than a year before they become dangerous. The bearing cup surfaces tend to pit and indent to such a degree that the steering becomes erratic. People are surprised how much more controllable their bicycles become once the steering bearings are replaced.

Pedals

Except for children's *toy* bicycles I would not recommend rubber pedals as they do not provide the same grip as the steel *rat-trap* type. In wet conditions, rubber pedals become exceedingly slippery. It is also recommended that clips and straps be used in conjunction with the steel pedals (see below).

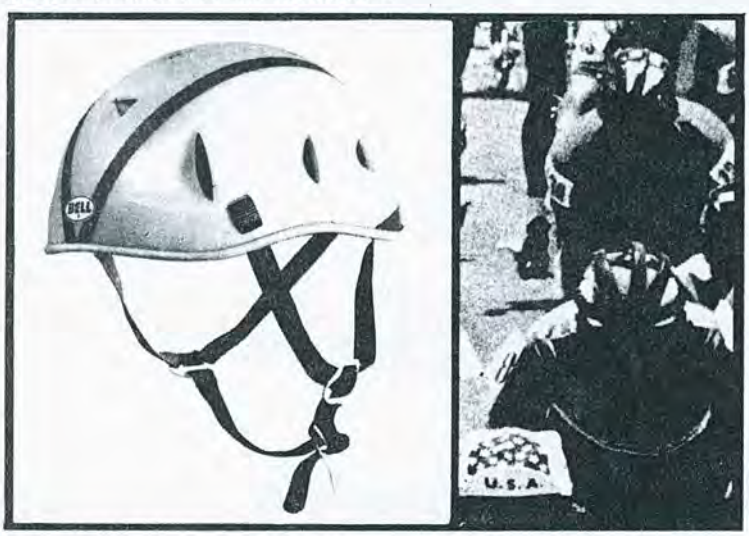
Warning Devices

The law requires that every bicycle be equipped with a bell or horn. Both are virtually useless because of their lack of volume and poor tone. Airhorns (marine pressure pack type) are effective but expensive and cumbersome. It is generally found that your own voice is louder, more penetrating and more immediate than any device.

Miscellania

There are many aspects of the modern 10 speed bicycle which should be modified. One of these is the position of the pump which is almost invariably placed along the top bar. This is not the best position as the pump tends to obey the law of gravity at inconvenient moments, contributing to a dangerous situation.

Failing good quality control ex-factory, dealers should offer and carry out a detailed and serious 1 month after purchase check-up. Many cases of poor assembly are evident, such as brake levers falling off traumatically because they were not secured properly in the first place.



The all-encasing type (left) is superior to the racing variety (right).

Tertiary Safety

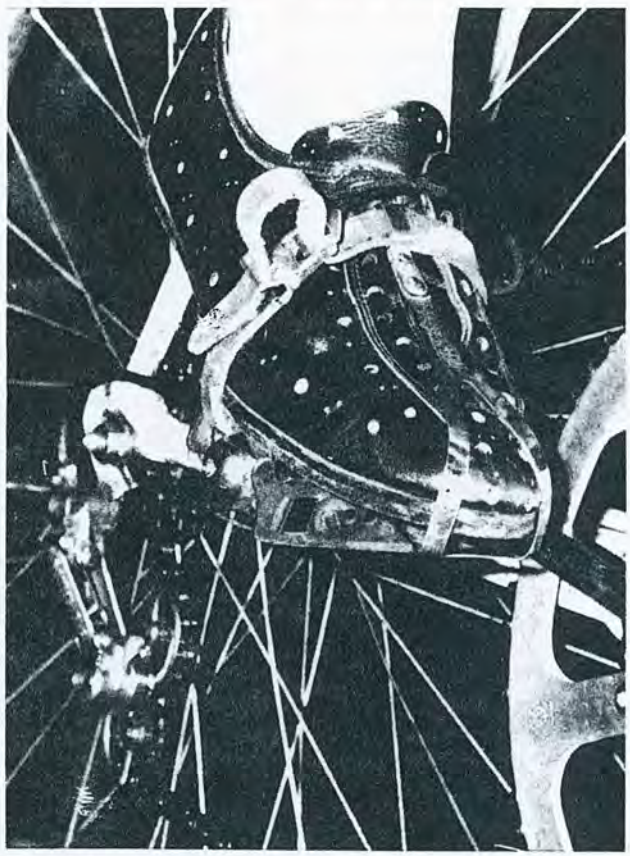
Safety Equipment

The tertiary aspects of safety concern what might be termed *protective* equipment to minimise personal injury.

Helmets

The Australian Standards Association is currently working on the design of a suitable cyclist's helmet. It is generally agreed that no helmet currently available is really suitable for the needs of cyclists.

Except for preventing minor cranial abrasion, the racing cyclist's leather padded-rib type of helmet is virtually useless. The all-encasing type as used in other sports such as canoeing and ice-hockey provides a much better impact and abrasion resistance. For this type of helmet there are two basic methods of construction. The first has polystyrene foam forming the energy absorbing barrier between the head and the outer sheel. The second involves an inner suspended frame (similar to construction hard-hats) which gives space between the helmet and the head. The latter type does seem more suitable for cyclists, mainly for reasons of coolness. Having a hot clammy helmet does not encourage one to wear it.

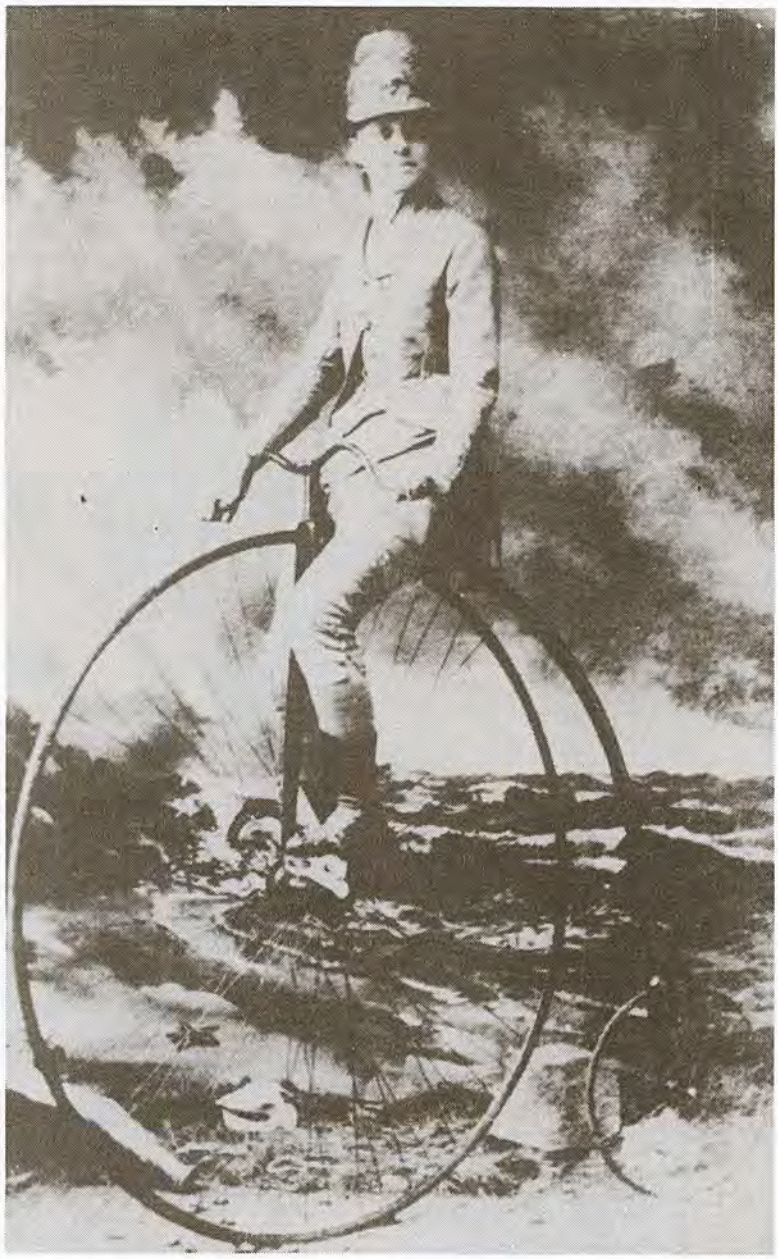


Racing Shoes Cleats and Straps

It may seem strange to non-racing cyclists for someone to recommend strapping oneself into the pedals as a positive safety measure. Obviously at times of heavy traffic when one is required to stop frequently, one foot should be free. But at all other times, being firmly attached to the bicycle will be a positive factor in preventing injury. In a sideways impact there is far less chance of leg breakage because they are, in effect, splinted by the frame. The structural strength of the frame complements the body frame strength. During an accident the hands should not be removed from the handlebars, nor the feet from the pedals, so that the rider and the bicycle go through the accident as one unit – and not a flying bicycle and flailing rider. Avoid the temptation to put out one hand to cushion a fall. This action will lead to one of the most common injuries in bicycle falls – the broken collarbone.

In the summary, it should be brought to the manufacturer's notice that some of the *features* offered on their bicycles are inherently unsafe. In many cases a safer bicycle could be produced at lower cost.

Next time you are in the market for a bicycle, take a long hard look at the product you are buying. Unfortunately you will be fighting a lonesome battle against poorly safety educated dealers. But using the facts presented here, you will at least have a sporting chance.



Travelling while Sitting Down

Bicycles from the Hobby Horse to the Penny Farthing

by Sally Matthews

In 1666 the English diarist John Evelyn visited friends near Epsom and found them making "a wheel for one to run races in." This somewhat fascinating description is not elaborated upon, but bicycle historians believe this machine was the first fore-runner to the bicycle.

One hundred years later, a Frenchman, M. de Sivrac designed the first bicycle of which there remains any record. It consisted of two wheels joined by a wooden frame resembling the body of a horse. It bore a leather saddle and was propelled by the feet.

Sivrac demonstrated this amazing contraption before Marie-Antoinette in the courtyard of the palace at Versailles. Apparantely he aroused quite a clamour.

Unfortunately the vehicle had a minor design drawback - it had no means of sterring!

Once headed in a certain direction there was no way the path could be changed.

Despite this Sivracs machine became the fashionable toy of the adult Parisienne aristocracy. As the fad caught on, cycling clubs were formed and young dandies held regular races along the Champs Elysees. For a while the spectacle caused considerable awe and excitement. Crowds thronged the scene. But the dandies began to succumb to rupture of the groin bought on by too overly frantic efforts. The fad died a quick and natural death.

In 1817 Baron Karl von Drais designed a bicycle with the added advantage of a fork for the front wheel which permitted sterring. The rider still perched on the saddle and propelled the machine by running, except down hill. Then he merely lifted his feet and enjoyed the thrill of the downhill coast, probably the fastest speed achieved by the horseless human at that time.

Von Drais' machine excited considerable interest - and a certain amount of hilarity. One cartoon at the time was captioned "A new jaunting machine by which you can ride at ease and are obliged to walk in the mud at the same time."

An early print showing hobby horses. Note the three wheeled version.

A major breakthrough in bicycle design came when cyclists feet finally left the ground. Known as the velocipede, this invention was the ingeneous work of Lallement - the man who goes down in the annals of history, not only for organising the necessary cranks to turn the wheels but also for mastering the twin arts of keeping the machine both upright and in motion - a feat previously thought impossible. He demonstrated his invention riding it down Paris Boulevarde St. Martin in 1863. It also attracted much attention at the Paris Exhibition.

Bul Lallement seemed to have thought so little of his invention that he failed to patent it. Instead, in 1866, he migrated to America, in search of his fortune!

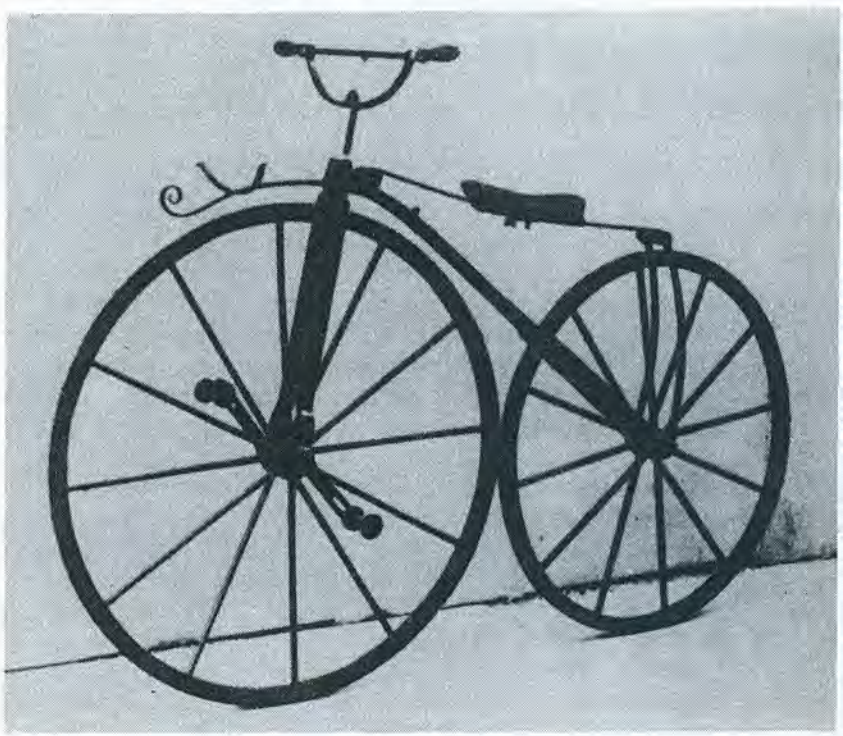
Lallement arrived in America ... bring with him the parts of 2dissasembled bone shakers (as they were known), and that autumn he cycled down the shady streets and across the bridge leading to the nearby town of Birmingham. He did not know it but he was on a collision course, destined to have the first of many falls that cyclists would suffer in the United States. Breezing along the country road, the Frenchman breasted the rise of a hill and flashed down the lane, dead on target with a waggon driven by 3 gentlemen who looked back in terror at the apparition descending upon them without brakes, (another problem yet unsolved). Lallement swept down the incline, his pedals blurring and flashing in the sun because he had "lost" them as the saying went. The wagoners whipped up their horse in the hope of out running the onrushing bone shaker, but the speed that was later the boast of so many Americans proved too much for the animal. Thanks to Baron von Drais steering mechanism, Lallement was able to swerve aside at the last moment but in doing so his front wheel went crosswise and he sailed over the handlebars into an adjacent ditch.

Despite its somewhat shakey (pun!) beginning, the velocipede caught on. Velocipede fanatics waxed eloquent about this 150 pound wonder. One enthusiast described it as "so perfect in its propelling power, so easy to ride, so swift."

Schools of instruction rose all over America and Great Britain. NY alone was estimated to have some 5000 cyclists. In Brooklyn, preacher Harry Beecher envisaged that soon 1000 velocipedes would bring his congregation to mass - hastily assuring the audience that this would not be breaking the Sabbath.

However, despite such enthusiasm, by 1870 the fever had subsided. The velocipede had too many design problems. Its wooden frame was liable to fracture and its weight made it difficult and cumbersome to manouvre. So the designers set to work to overcome these limitations.

Soon after, rubber tyres appeared on steel rims for the first time. Rubber coated pedals replaced the steel ones in 1871, permitting the use of the ball of the foot rather than the instep. Designers then hit upon increasing the size of the front wheel in an effort to reduce the amount of pedalling required. The Penny Farthing or the Grand Old Ordinary, as it was called, came into being and a new craze was born.



The Boneshaker.

In 1877, an American, A.N. Pope visited bicycle factories in England, as was so impressed that he decided bicycles were the vehicle of the future. He returned to the states and

converted his shoes and small mechanical parts factory to a receiving house for imported bicycles. He then commissioned a mechanic, Atwell, to build a bike using the English models as designs. Atwell produced a "wonder bike" weighing only 70 pounds and costing $313.

Pope's next problem was having the general public accept his product. In the first advertising campaign of its sort he coupled bicycling with health and happiness. Unfortunately physicians were quick to point out the virulent dangers of this strange new sport - likening it to playing with a fused mortar shell.

No to be daunted the enterprising capitalistic spirit of Pope prompted him to offer money to any physicians who would write articles defending his health claims. The articles which appeared under his direct auspices could not have failed to gratify him!

A woman bicyclist from the 1890s.

From all accounts however, the Grand Old Ordinary was often far from being beneficial to the health. The dangers of taking a fall from a 4 - 5 foot front wheel were not to be laughed at. The machine was more than a trifle unwieldy and was easily upset by the smallest stones.

Fortunately however, instructions and lessons abounded. In the event of a near fall, one riding manual said "should you still fancy yourself falling over on either side, turn the wheel the same direction as your body inclines, and you will be able to procede as before. This turning of the wheel in the same direction as the falling bicycle is the "Grand Secret".

Bringing the outdoors in. An 1896 velocipede riding school.

But, not surprisingly, if one were to follow these directions, the penny farthing was not easy to master - so the novice was encouraged in a suitably uplifting manner.

I do not believe in the man who becomes a fair rider at his first attempt. In this, as in everything else, perseverance is indispensable. Never forget that failure is the master of success.

Unfortunately, some people were never convinced as to the worthiness of the new sport. One Baltimore preacher on a Sunday morning in 1896, had this to say: "These bladder wheeled bicycles are diabolical devices of the demon of darkness. They are full of guile and deceit. When you think you have broken one to ride and subdued its wild and satanic nature, behold it bucketh you off in the road and teareth a great hole in your pants. Look not on the bike when it bloweth upon its wheels, for at last it bucketh like a bronco and hurtath like thunder. Who has skinned legs? Who has ripped breeches? Who has a bloody nose? They that dally along with the bicycle."

The preacher was not alone. The PF was regarded as sheer evil by many - especially those that rode horses. Prior to the "bicycle age" the horse had no competitors. The horse drawn public was righteously furious. Such stange unnatural contraptions with shining spokes - no wonder any red blooded horse bolted at the mere sight of it!

However, the bicycle - horse feud was destined to be long standing. The contortions involved in getting on and off the PF

were such that the cyclist was very determined to stop as little as possible. Getting on the PF meant running flat out until it gathered up enough speed, and then putting the left foot on the mounting bar that was welded to the frame. Hoping that momentum would continue to carry the bicycle forward, the cyclist next vaulted onto the saddle and frantically tried to get his feet on the pedals, which all this time were turning with the front wheel. With all this on his mind the cyclist thought very little about any stray horses in his path!

The British Parliament tried to solve the problem in 1888 with the passage of a Bill which conceded that the bicycle was a carriage and therefore entitled to its place on the road **provided** a bell was fitted and rung continuously while the machine was in motion.

Thus the bicycle bell came into its own and bell music climbed to unheard of heights when the West Sussex Gazette recorded straight facedly:

"The alarm bells on bicycles have suggested to some genius that the difference in the tones of various bells might be utilized to make octaves. This idea was acted upon, and an experiment was made the other night with complete success. A number of cyclists rode through the city playing the chimes "Blue Bells of Scotland," "Home Sweet Home," "Auld Lang Syne," "Rule Brittania," "The Men of Harlech" and "God Save the Queen". This was not a bad repertoire to start with. We shall now have bicycle bands and if they can supersede the German musicians who haunt our thoroughfares, many people who have denounced bikes will at least be softened."

Bells or no bells, the fact remained that the Grand Old Ordinary was hardly very safe. A story current in the 1890's was that the Shah of Persia visited a bicycle works during his visit to the U.K. Fascinated, he bought 2 Grand Old Ordinaries and had them shipped to Persia for his own personal use. Unfortunately the skills required seemed to continually evade him despite determined efforts to master the tricky monsters. Eventually, cursing them as "contraptions of the evil one", he consigned the 2 bicycles to the back barracks. In an amazingly chauvanist brainwave, a new use of them came to him. Noisy trouble makers who had been plaguing his harem were pulled out of their quarters and set on the "evil ones" which were placed at the top of a steep rise - and given a mighty push. Amidst screams and protestations they flew out of control down the hill to unavoidable falls at the bottom. The number of times this punishment was meted out depended on the enormity of the crimes supposedly committed by the turbulent women. What a pity they didn't get it together to pedal all over him!

From:
Smith: *A Social History of the Bicycle.*
McGonagle: *The Bicycle in Love, War and Literature*
Woodforde: *The Bicycle.*
Derson: *Bicycling.*

. . . The loneliness of those roads. It is past all belief to those who never cycled over them and only know the whirl of traffic that congests the highways today. Perfect quiet reigned out in the country, miles would be covered without meeting a vehicle and those that were met were mostly farmers' waggons slowly drawn by heavy horses. Two West London club members on the road in the early 1880s.

Cycle camper near Elands

The Camping Cyclist

by Charles Vassel

It's so easy to give good advice, but not always so easy to act upon it! the best advice if you are thinking about taking up cycle camping is not to spend a lot of money on equipment until you are quite sure of your requirements. When you are rearing to go it takes a lot of patience to go shopping around and, if possible, getting to find out personally from cycle-campers what they use.

The trouble these days is that a lot of people think camping means a vast multi-roomed affair stowed in a car complete with the kitchen sink (some even think that caravanning is "camping") and heading for an established camp-site equipped with all mod. cons.

One result of the popularity of heavyweight camping is the decline in the range of lightweight equipment which is available but provided you know what you are looking for your needs can be very well met by people who specialise in equipment for hikers and cyclists.

Clearly the tent is the most important item - and can be the most expensive. There are basically three designs of tent, "A" tent, WALL tents and PYRAMID tents.

The "A" tent is the most simple design with the sides pegging down to the ground and the ridge being supported by a cord tied between 2 poles or 2 trees. The wedge tent is a variation of the "A" tent having one end higher than the other thereby reducing weight but also restricting head room to one end.

WALL tents require guys but allow the use of all the floor space unlike the "A" tent.

PYRAMID tents are designed for cold windy conditions. They are not really suitable for Australia as they do not allow enough ventilation for it's warm climate.

Prices for an "A" tent range from around $33 for the "Trinidad" a small two person with a cotton inner, nylon fly, sown in floor and mosquito netting; around $45 for a Karrimor nylon one person wedge tent with sewn in floor and mosquito netting; around $55 for a two person japara (cotton) tent up to $160 for a super-light weight (1,900 g) all nylon tent with built in fly, sown in floor and mosquito netting.

Prices for WALL TENTS range from; around $68 for the "GLEN" a two man made from rot resistant japra with doors both ends, it is also available in Stormtite (a highly "touch resistant" proofed cotton ideal for extreme wet conditions) for an extra $10; to around $115 for the "BELLENDER" a three person made from Stormtite with zipped belled ends and doors both ends price includes ropes poles and pegs.

The next most important thing to the tent itself is the ability to sleep well in it and for this a filled sleeping bag is a necessity. A wide range of these is available, the filling being either down or dacron; a down bag is more expensive but weight for weight it is a better insulator.

Prices range from; around $64 for the "Jindabyne" (dacron filled); around $89 for the "ALPINE" (down filled) up to $155 for the "BOGONG" a down filled, box-wall, hooded bag.

To keep the bag clean and to provide a little extra warmth and comfort it is a good idea to use a hostel-type sheet sleeping bag inside.

Then there is the cooking and eating business. There is a wide variety of portable stoves on the market. Those using petrol, kerosine or canned gas will last a couple of hours on one charge, while the smaller and simple boiling sets are intended for a quick cup of tea.

Petrol stoves can come as small frameless tank and burner measuring 7 in. in length and 2 in. in diameter and weighing only 6 oz. (cost around $16). There is also a type which incorporate a cooking pot and frypan which double as a container for the stove measuring 7 in. in diameter and 4 in. deep (cost around $31).

There is much to be said for the well established primus stove, made in several sizes. The ½ pint size is ideal for the cycle camper, weighing only 1½ lb. complete with all accessories.

The high-pressure gas outfits are very light - a mere 10 oz. but against this the replacement cans are considerably more expensive than petrol or kerosine (cost around $10 the cooker, $1.30 a replacement can).

The small solid fuel stoves weigh only a few onces are very cheap but are adequate only if you intend to eat out and prepare hot drinks in camp.

Cooking is done with a metal mess kit which pack neatly together for carrying. These sets cost from $3.00 up and there are several to choose from. Deep sets will include a small saucepan, a frying pan, a plate and a mug, while the shallower ones just have plates one usually with a handle to form a frying pan.

The pans also form a useful container in which to pack items of food for the journey especially perishables.

For the rest, only a personal miscellany of items is required. Better take a cutlery set and some plastic containers for liquid and solid foods. A spare torch is useful, although the bike lamp will always serve.

You will soon learn what "travelling light" means and how completely adequate it can be. Concentrated and dehydrated foods are useful from the point of view of saving space and avoiding wastage although it is only necessary to rely upon them if you are visiting truly remote areas.

All this you may say is quite a business and not cheap. What must be remembered is that once you have made the initial outlay you are all set to enjoy many camping expeditions with no further expense on equipment and you will reduce your accommodation costs to nil.

Better still a new world of independence, adventure and achievement will be yours to enjoy.

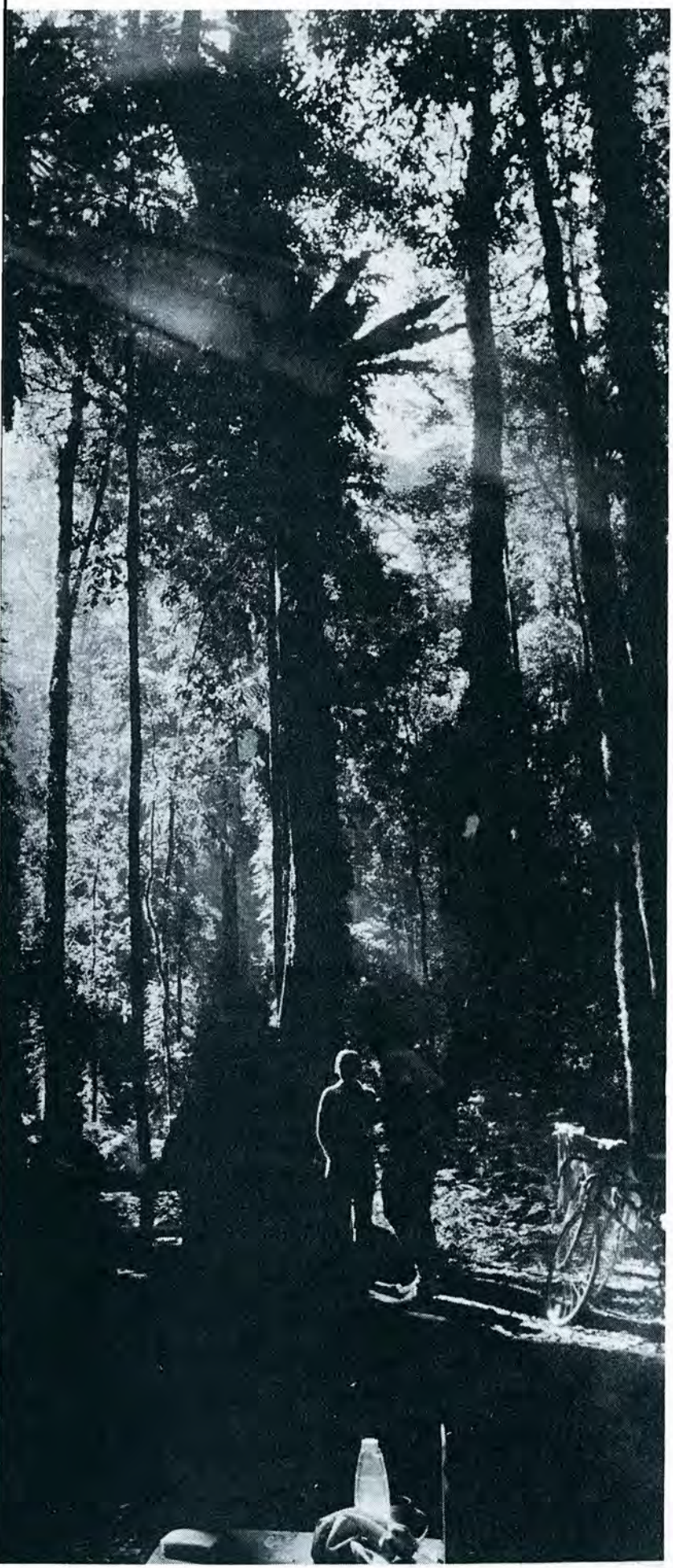
Even the lone cycle camper soon discovers that packing the camping gear on the machine is not difficult - and if two or more travel together the load can be shared so that the packing problem is no greater than that for other touring.

Certainly pannier bags as well as a saddlebag will be required, but with lightweight equipment and a little skill aquired after short experience these will be found adequate for all that is needed.

A filled sleeping bag rolled up as tight as it will go and stowed in it's bag will fit neatly into a large saddlebag leaving space at the side where the mess-kit will fit snugly, and there will still be room enough to accommodate several other items such as cutlery, and jumper.

As the tent will always be the first thing to be unpacked and the last to be put away the best place to carry it is atop the pannier carrier. This has the added advantage that should they have to be carried when wet they will not come into contact with other items making them damp. If the tent has managed to stay dry it can be folded so as to fit in a pannier to keep it that

Campsite: Richmond R., near Rosebury NSW.



Rainforest campsite
Border Ranges area Northern NSW.

way.

Cooking accessories, stove and food containers should be equally disposed from the weight point of view in each pannier, together with clothing. The latter is best carried in various plastic bags - always recommended to keep them dry and clean.

A few square yards of plastic or oilskin cut from an old cape will come in very useful for several purposes. The tent and it's accessories can be wrapped in it for carrying and it can be sat upon outside the tent when cooking and can be used to cover the saddle at night.

Normally it is possible to obtain water on route but up to four bottles may be easily carried if necessary; one on each of the down and seat tubes and two in handlebar carriers.

You may not always find the ideal camp-site but it should have as many of the following attributes as possible.

It should be on rising ground and sheltered from the wind or at least with the back of tent to the breeze. Do not camp under trees, not only for the well known lightning reasons but also you may find that some trees exude a sticky substance at night which it takes hours to remove from the articles upon which it descends.

You should be handy to a water supply but not too close as mosquitoes congregate over water.

When travelling begin to look for a camp site a few hours before nightfall, unless you know the spot you are heading for, and if you see a good place stop there. All too often one thinks "Ah it's early yet and we're bound to find another site. Only to find out that it doesn't work out that way and you find yourself in a none too comfortable spot.

Pitching a tent takes most people three hours the first time they try and then fifteen minutes subsequently. Hint - have a practice run before you start out.

Lay the ground sheet out flat, if possible finding a little hollow in the ground about the point where your hip will rest, and then peg down the tent walls or sides with the groundsheet all round. The poles are then easily inserted and the guys pegged out.

The guy lines shrink when damp so they should be slackened off when it rains to allow for this.

The true camper may be an expert improviser but he/she will also enjoy comfort. He/she has been known to fold and loosely tie a spare inner tube and then inflate it a little, thus forming a small cushion under his/her hip or shoulder.

He/she has long known that tufts of grass will quickly clean greasy plates and cutlery. He will have a few feet of thin but tough string permanently wound around his saddle pin, ready to unroll and loop around a tree or post, on arrival at his site, and fasten back to the frame, solving the problem of how to keep the cycle upright.

Lists are published of established camping sites but many cyclists however prefer to leave such sophistication behind and camp in the hills and remote places. This certainly is real independence and the sign of a real camper.

Cycle camping must be the ultimate in outdoor life and freedom. Self-contained and self-supporting, settling within sight and sound of the sea or in the mountains, seeing the sunset and sunrise as never before ... it's fantastic. Only this way can you really say that you are able to stop just where and for how long you please.

One important final point. When you reach home after your camping trip lose no time in hanging your tent out until it is perfectly dry. If you don't rot or mildew will set in somewhere or other even in the best materials sooner or later. The tent is a vital and valuable part of your equipment and must receive every consideration. You are certain to need it again.

Tropic Tablelands

Bicycle touring the Atherton Tablelands

by Warren Salomon

The far northern region of the State of Queensland has often been described as a tropical paradise. A visit there by bicycle will only confirm this in the mind of the beholder. For the cyclist there is much to explore and experience of areas like the Atherton tablelands which is situated inland of the Coral Sea from the towns of Cairns and Innisfail.

The tableland has its origins many millions of years ago. The earths crust has undergone enormous upheavals as it continues to cool and shrink. Much of the land has been faulted and block mountains or horsts separated by rift valleys or grabens are seen extending in a NNW direction. The great plateau has been uplifted and forms a corridor between the even greater uplifted horsts of the Bellenden Ker range and the Hugh Nelson Range. Volcanic activity also contributed to the shaping of the plateau. Remnants of this are the crater lakes of Eacham Barrine and Euramoo, Mt. Quincan and Bromfield Swamp all of which lie roughly along the water shed between the northward flowing waters of the Barron River and the southward flowing Johnstone River systems. Rich Volcanic soils of red basalt predominate in the area and at the time of the European colonisation a huge rainforest grew in it.

There were trees that measured more than twenty feet round their trunks, huge cedars and silky oaks, rose woods, beaches, walnuts, pines and silkwoods and a mass of smaller trees, shrubs, vines and creepers matted into a jungle impenetrable except by a few tracks used by Aborigines who lived well on wallabies, possums, bandicoots and a vast selection of other small game and birds.

In places the forest thinned out into more open pockets, which the Aborigines used for the corroborees and these gave the first European settlers their foot hold. They became staying camps for packers bringing in supplies and taking out minerals from the tin mines of Herberton along Robsons Treck (now Gillies Highway) to the Coast. Yards were built and accommodation provided. The tablelands wet season lasted nine months of the year in those days with weeks on end of misty drizzling rain. Trecks were boggy and slippery and the going was very heavy.

By the turn of the century mining had declined and some miners turned to agriculture and timber getting.

The Cedar getters came to the forest having moved up from the Johnstone and Daintree areas and began their selective logging of the scrub. Following the Cedar getters came agricultural settlement. In 1907 the Queensland Government threw open for selection 35 000 acres to the south and east of the growing township of Atherton. Clearing of the forest for mostly dairying usually meant the deliberate burning of huge quantities of valuable timber. The remnants of Cedar and other cabinet timbers were used for house frames and fenceposts. Little thought was given for alternative uses of the forest in those days for the most urgent task was to clear the land and plant grasses on the slopes for the increasing dairying herds.

Now days the once profitable dairying export industry has declined and only those large enough to mechanise have survived. The motor car has also had its impact on rural life. Small villages such as Tolga Yungaburra and Milla Milla have all but disappeared as people motor to Atherton where most of the commercial activity is centred.

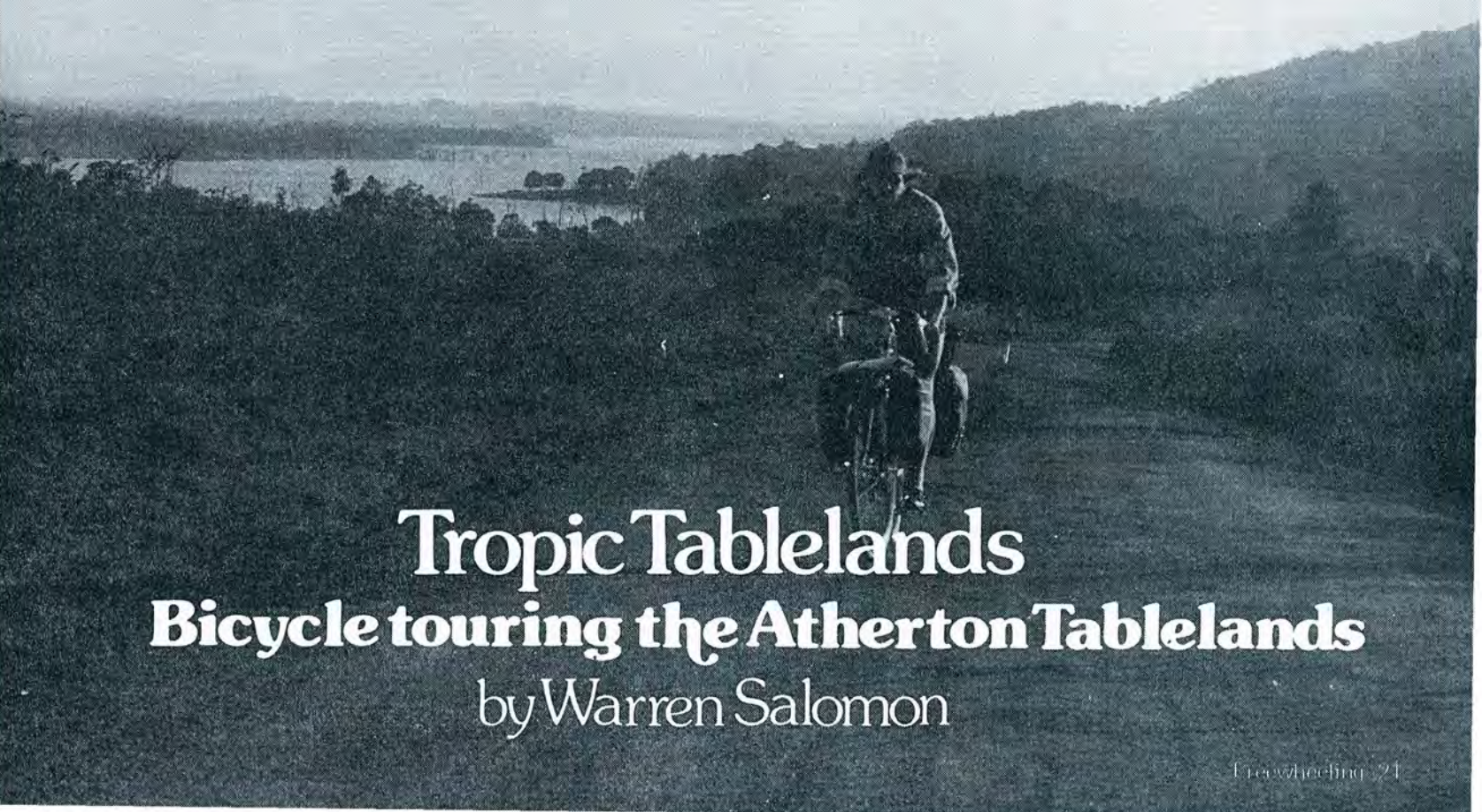
Even though Atherton is in the tropics because of its its climate is much cooler than the Coastal towns. Cycling can be a year round activity though summer days can be very hot. Definitely the best time of the year to cycle there, especially if you are travelling from the Southern States is winter. Nights are cool to cold and days mild. Winter is also the most reliable time for dry weather.

Summer is very wet with heavy down pours not uncommon.

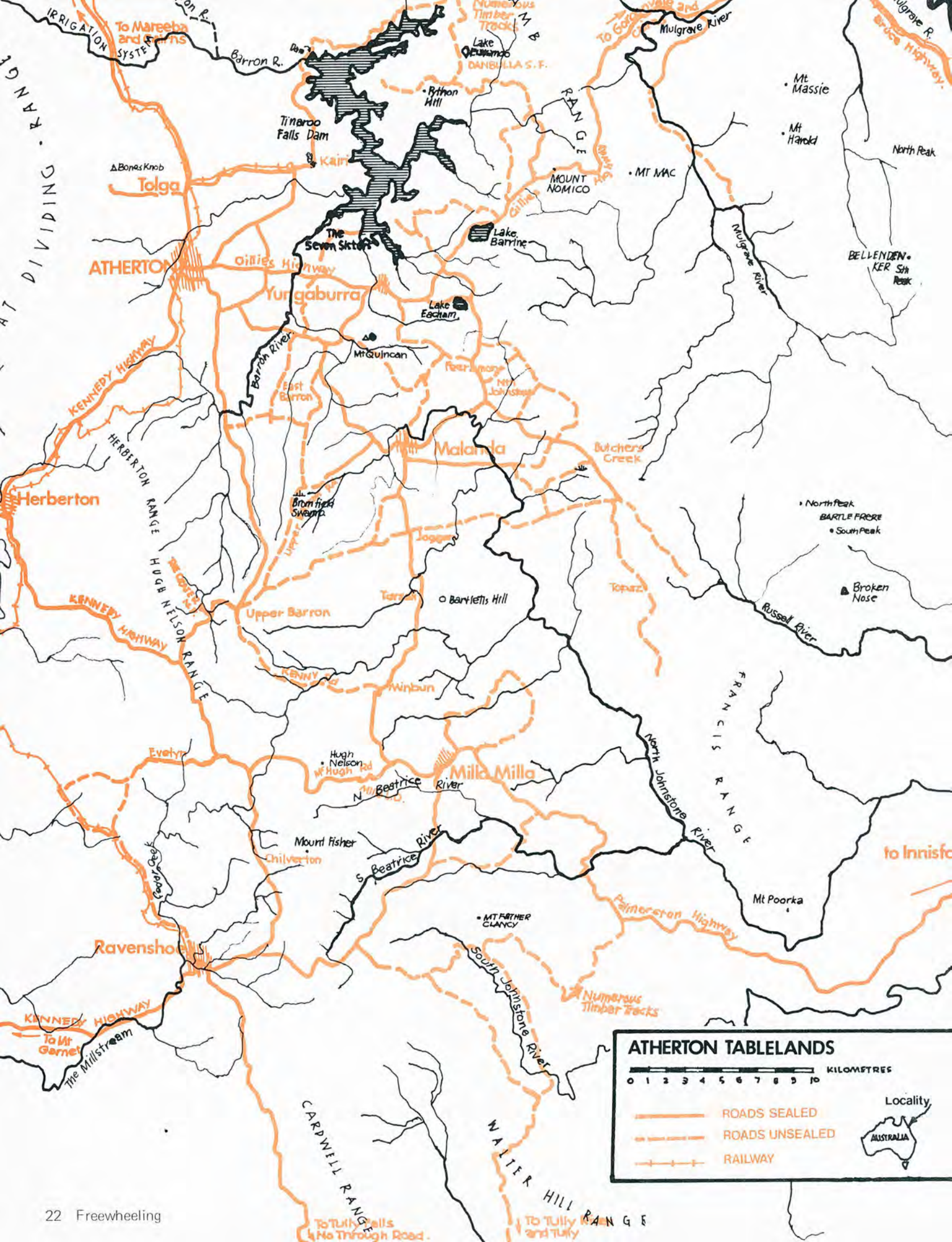
In the travelling information section following, I have attempted to describe a suggested tour from south to north. I have tried, however, to describe it in a way which will provide information about other route options you may wish to experience when you discover the great plateau and its environs.

Tour Suggestion: Train from Cairns to Tolga, then to Tinaroo Falls Dam, Lake Euramoo, Lake Barinne, Yunguburra, Lake Eacham, Malanda, The Crater, Milla Milla, Ravenshoe, Innisfail or Tully.

All map references are given for National Map Series 1:100 000 maps.



On the road to Lake Euramoo. Lake Tinaroo in distance.


ATHERTON TABLELANDS
KILOMETRES
0 1 2 3 4 5 6 7 8 9 10
ROADS SEALED
ROADS UNSEALED
RAILWAY
Locality
AUSTRALIA
To Mareeba and Cairns
IRRIGATION SYSTEM
Barron R.
Dam
Lake Tinaroo
Numerous Timber Tracks
DANBULLA S.F.
Bython Hill
Tinaroo Falls Dam
Kairi
Bones Knob
Tolga
ATHERTON
The Seven Sisters
Gillies Highway
Yungaburra
Lake Eacham
Mt Quincan
Barron River
East Barron
KENNEDY HIGHWAY
HERBERTON RANGE
Herberton
Bromfield Swamp
Upper Barron
Tarzali
Bartletts Hill
Malanda
Butchers Creek
Topaz
Broken Nose
Russell River
HUGH NELSON RANGE
Evelyn
Hugh Nelson
Mt Hugh Rd
Milla Milla
N Beatrice River
Mount Fisher
Chillerton
S Beatrice River
Eacham Creek
Ravenshoe
KENNEDY HIGHWAY
To Mt Garnet
The Millstream
Mt Father Clancy
Palmerston Highway
Mt Poorka
North Johnstone River
FRANCIS RANGE
South Johnstone River
Numerous Timber Tracks
CARPWELL RANGE
WALTER HILL RANGE
To Tully Falls No Through Road
To Tully and Tully
Mulgrave River
Mt Massie
Mt Harold
North Peak
MOUNT NOMICO
MT MAC
Lake Barrine
BELLENDEN KER Sth Peak
North Peak
BARTLE FRERE
South Peak
to Innisfo
GREAT DIVIDING RANGE

Touring Information

Campsite: Lake Euramoo.

Access

Road: Possibly the best *up* road onto the tablelands from the coast is the Palmerston Highway from Innisfail. This is the least trafficked of three possible routes, and has the best grades. Of the other two the Gillies Highway would be an acceptable down route but is well used by high speed cars and trucks because it is the most direct access road to the coast from Atherton the commercial centre.

The other road through Mareeba and Kuranda is also well used by traffic is longer and drier for the section between Kuranda and Tolga. The coastal escarpment section is heavily trafficked by motorised sight-seers.

Railway: This offers a cheap direct access to starting points on the tablelands. There is a rail motor most days as far as Ravenshoe. The Tablelands proper starts at Tolga. From Tolga there used to be a branch line down to Milla Milla via Yungaburra and Malanda. This has been dismantled some years ago and most of the decaying timber bridges removed. The embankments and cuttings still remain and with some work the right of way could be made into a magnificent rural bikeway for the use and enjoyment of local residents and travelling cyclists.

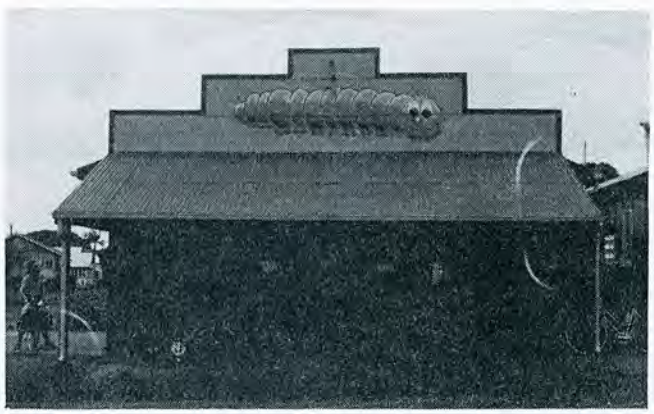
Starting your tour on the tablelands: Good starting points from the railway are Tolga (North), Atherton (NW and commercial centre) Herberton (W old mining town on Evelyn Tableland), and Ravenshoe (SW and still a timber town).

Routes: The Tablelands offers many roads which are almost ideal for cycle touring. For a north to south traverse begin at Tolga and travel out to the Tinaroo Falls Dam built in the 1950's to supply an irrigation scheme and control the excessive runnoff of Barron waters from the cleared tablelands. In the tropics down pours are often measured in centimeters per minute. Near the falls are the orchid gardens worth a visit. From the northern side of Tinaroo Falls Dam a gravel road follows the perimeter of the lake around to Lake Euramoo once a volcanic crater now a beautiful lake surrounded almost by rainforest. There is a forestry department constructed picnic site overlooking the lake . This makes an excellent campsite as the road has very little traffic on it. There are many roads which can be travelled in thick rainforests north of here, and there is a route through the forest from Mareeba to Lake Euramoo. You will need to consult the 1:100 000 maps and get localized information before you do this as some tracks fall into disuse in areas not being logged. On all of these forest roads keep a listen and look out for approaching log trucks. The road surfaces are mostly formed earth with some rock. Conditions will depend on the season. Winter is the only reliable time for long periods of dry weather. From Lake Euramoo the road south passes the forestry camp and becomes a beautiful rainforest road until it emerges into agricultural land at Map Reference CA 577990. From here the road is mostly bitumen to the Gillies Highway, CA 579952 near Mt. Nomico a few kilometers from the faulted escarpment. From this point the larger crater lakes, Barrine and Eacham are easily reached. In this area you might find a vegetable stall open at CA 522894. Swimming in the cool deep lakes is an amazing experience. Barrine is the largest and has a guest house by its cleared shoreline. A strip of bitumen (the road) cuts the band of scrub which surrounds the lake. There are constructed walks around the edges of the lake and a slow tourist boat with guided commentary on the lake mostly used by the continuous shuttle of tourist coach passengers. It's much more interesting when you bike it. A stop for a cool swim becomes a necessity in warm days.

The village of Yungaburra has some shops, a P.O. and a hotel for quick or long provisioning stops. From Yungaburra the Gillies continues to Atherton and two roads are possible to Malanda. The road via Lake Eacham offers access to the rainforests beyond Topaz and passes through the small patch surrounding Lake Eacham. Camping in this area unless in the caravan park at CA 54 8875 is difficult perhaps the forestry or National Parks and Wildlife Service (NP&WS) people could advise you. The other road from Yungaburra goes south past the Curtain Fig Tree. Further south is Mt. Quincan a small volcanic crater once covered with huge red cedar trees and now an abandoned quarry site. A small crater depression holds water after periods of rain.

Malanda is situated at about the geographical centre of the plateau on the headwaters of the North Johnstone River just south of the low ridge which divides SW to NE the northward flowing waters of the BarronRiver and the south flowing waters

of the Johnston System. This divide has been reduced by erosion from about 8 km wide to a line on the map. It is generally along or near this divide that most of the evidence of volcanic craters occurs. Near Malanda is the Johnstone River Falls which makes a nice place for a lunch stop. Campsites in this area are not easily found. A reserve at the Johnstone River CA 526823 has a sign which *discourages* camping. Ask at the Caterpillar Co-op for camp site suggestions. Overnight camping is not a problem for bike campers in most places where a good water and wood supply exists. The Hotel at Malanda offers accommodation and is recommended. The building, a timber structure was built shortly after the turn of the century and has a beautiful cedar (I think) main stair case. The dining room still operates.



The Caterpilla Co Op is a brightly painted shop in downtown Malanda.

At this shop you can buy local made crafts, locally grown fruit and vegies at inflationless prices, and dry goods type foods like raw sugar, flour, tea etc.

Visit the co op and meet the people who make it all possible, and you will probably meet someone else who knows someone who you both know. They also have a regular Moon dance which is fast becoming a participants must for the many younger people who are settling on the Tablelands. They are very mobile Tell them that Atherton is a better place for bicycles than cars.

Travel south-west to Ravenshoe from Atherton or Malanda offers a choice of routes. The most trafficked and direct is the Kennedy Highway via Upper Barron past the Crater National Park (Mt Hypipamee) a good place to spend a rest day or two exploring the creeks and enjoying the prolific bird life in the rainforest. The campsite is at the end of a short road immediately to the west of the Barron River highway crossing. It is well sign-posted. If you are there for any length of time you will witness an endless coming and going as tourists arrive in cars and busses walk the short distance through the forest to the deep hole in the rock known as the crater and then hop back into their vehicles and disappear. During the evenings it is mostly deserted. You will need to get a permit to camp for longer than overnight at this place. Along the rainforest tracks at night the glow worms and fire flies add extra magic and possums regularly patrol the bins in the area for left overs. Don't encourage their dependence on our life styles by giving them your food and make sure you store it well away from prying claws and teeth. You could help the (NP & WS) people who maintain this area during your stay by investing some energy into the areas tidiness. The motor car brings many careless people to this beautiful spot. Cyclists aren't like that are they? The nearby crater is not of volcanic origin and is slowly being filled by countless rocks which are being thrown in to it. Rocks are almost as scarce as firewood. The area is of special significance to the Atherton Aboriginies, it's not hard to see and feel why if you spend some time there. Water for flush toilets and drinking is piped to the camp site from the creek by means of a small hydraulic ram which uses only the running creek water to propel it: very appropriate technology.

Access to the Upper barron area from Malanda is via the Upper Barron road. This road passes a depression of volcanic origin called the Bromfield Swamp. It has been breached by a stream on one side which drains the now swampy bottom of the crater. The Upper Barron road is quiet and bitumened as far as the crater. From there up to the Kennedy Highway it is quite steep (in parts) gravel road. An alternative route with better grades and less bitumen is the Merragallan road further south off the Malanda to Milla Milla road.

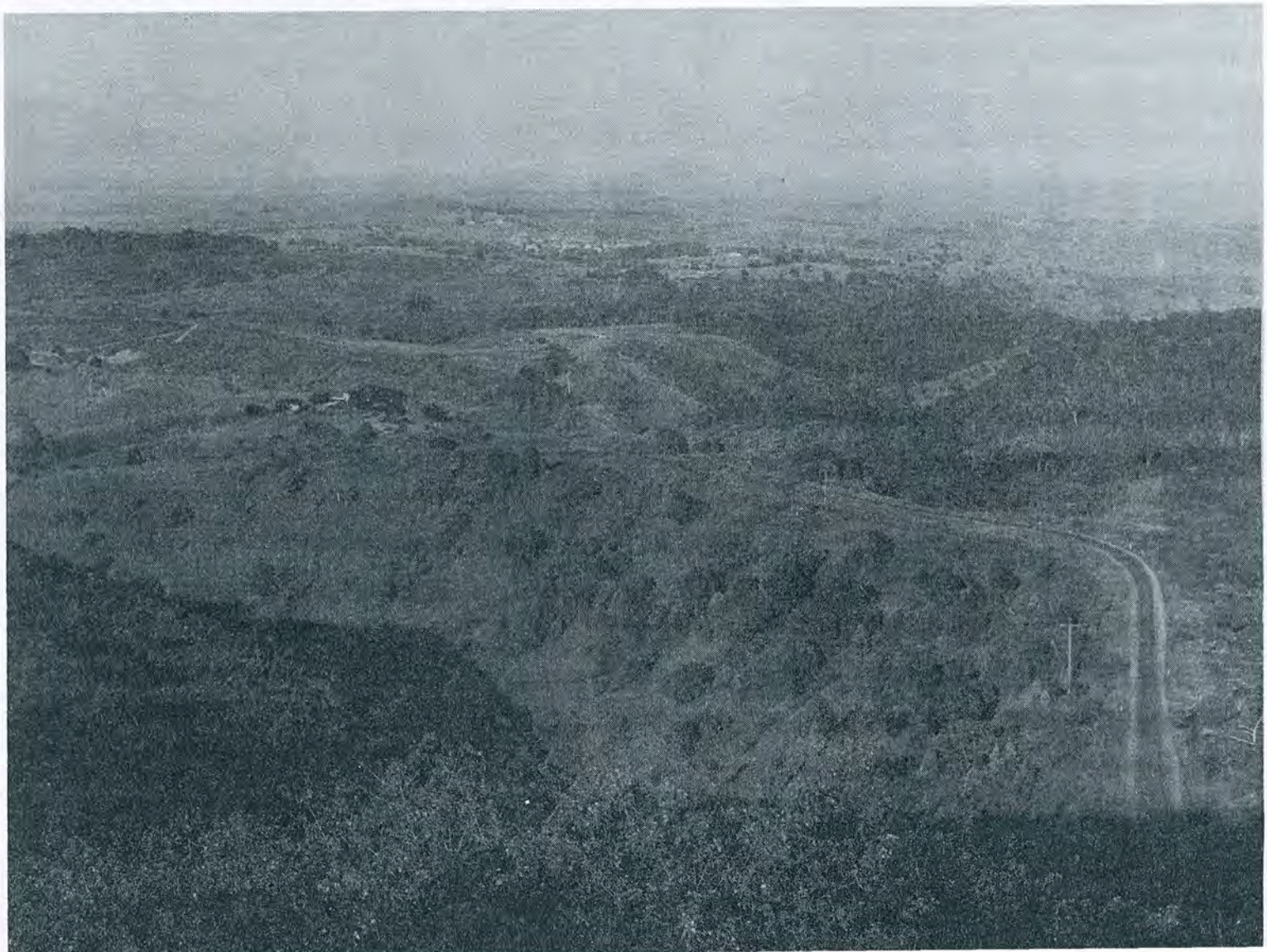
From the Crater National Park the highway continues over the Hugh Nelson Range to join the Herberton to Ravenshoe road. Herberton can be easily reached from here or from Atherton if travelling south. The towns of Herberton and Ravenshoe are situated on what is called the Evelyn Tableland,

slightly higher in elevation to Atherton and further to the west. The hills surrounding Herberton are honey combed with old mine shafts. The Kennedy Highway and the Atherton to Herberton road are used by high speed commercial and tourist traffic.

To the south of Malanda is the village of Milla Milla situated on the Palmerston Highway. This highway gives Ravenshoe road access to the coast at Innisfail and along most of its length is narrow bitumen. It has only light traffic usage. The southern half of the plateau feels more isolated and less populated than the flatter northerly areas surrounding the dam and Atherton township. The railway line reached Milla in 1925. Little remains of the station and yards except the levelled site, now a park. Milla Milla has a cheese factory and some shops including a butcher and baker. It is usually very quiet on the streets.

There is a connecting road from the Kennedy Highway near the crater to the Malanda – Milla Milla road. It is mostly a gravel road with some difficult patches where the rocks are very large and loose. It follows a ridge down from the highway at CA 414717 near the Upper Barron road junction. It is recommended only as a down route ie travelling east. and offers extensive panoramic views of the plateau and Bartle Frere with its *broken nose* to the distanct east. The gravel surface becomes bitumen at the crossing of Dirran Creek South Arm and meets the Malanda to Milla road at the nonexistent settlement of Minbun. It is sign posted at this end and is marked on the map as the Kenny road. Further south another good connecting road exists between the Atherton and Evelyn Plateaux. Called the McHugh road it crosses the ~~H~~ugh Nelson Range and offers perhaps the best over-all panoramic views of the tablelands.

Far Left: Rest and lunch stop at Johnstone River Falls.
Middle Left: Campsite: The crater NP
Above: Lake Eachem
Below: Panoramic view from Milla Lookout looking East. Bartle Frere and 'Broken Nose' in distance. Township of Milla Milla mid-distance. Cyclist pushing up hill just into shadow on road below.



The Milla lookout near the top used to have a water supply in the form of a tank collecting water from a shelter roof, but this has been badly holed by motorised vandals. If you wish to wake to the splendour of sunrise over Bartle Frere you will have to carry water with you. The farm at CA 462621 is friendly and will probably fill your bottles and buckets with water.

Ravenshoe is an old timber town on the western edge of the Evelyn Tableland. It is a pleasant town with a wide main street and makes for a good provisioning stop. Ravenshoe is located on a creek called The Millstream which, like all of the streams of the Evelyn Tableland, are part of the Herbert River system and flow south many kilometers before emptying into the sea at Ingham. The countryside west of Ravenshoe is drier and covered with open eucalypt forest. Possible camp sites apart from tourist parks are near the Little or Big Millstream Falls. Sites away from the influence of the motor car are harder to find.

From Ravenshoe there are two routes off the tablelands to the coast, the already mentioned Palmerston highway and the forestry roads through the rainforest south to the Tully River valley. This last route is very spectacular especially the descent to the Tully River down steep rainforest slopes, a drop of about 600 metres along a very bad gravel road. It is used mainly by local farmers and Electric Authority technicians who service a high tension power line running across country from the hydro near the Tully falls to Innisfail and points further north. From Ravenshoe the turnoff for this route is at CA 479535 and is not sign posted. The bitumen soon ends and the road travels through cleared land to another road junction at CA 517517. To take the most direct route turn right at this intersection and follow the road on into the rainforest. The other road (straight ahead at CA 517517) leads to the Maalan Forestry Camp. It is possible from here to travel along forestry roads east to the Palmerston Highway near Crawfords Lookout. Local knowledge should be sought before attempting this route. Also a possible road (unchecked) follows the east bank of the Johnstone River south and crosses it at the power lines. There is the possibility of a camp site around this crossing (in wet weather it may also be unpassable). From here the road climbs up to the crest of the ridge to join the road previously mentioned (turning right at CA 517517). From the intersection at CA 578444 the road roughly follows the H/T power cables to the edge of the Tully Valley escapement. There is also another road off to the east at this junciton. In Spring 1976 it was used by logging trucks and was more prominent than the actual through road. The road from this point to the Tully River is recommended only as a down route and in parts needs extreme caution. Once down off the steep slopes the road comes up on a well used road near a forresters camp. Keep travelling east until the bridge accross the Tully River is reached at CA 592331. This area has good campsites along the banks of the river. It is approximately 25 km into Tully from here along mostly gravel road, The climate is now tropical maritime so beware of the midday sun. If you are using this road from either Ravenshoe or Milla Milla a very early start is necessary as there are no campsites between Maalan and the Tully River. It is possible to find water in soaks along the way and once the steep descent is reached there are many cool fast flowing streams. Beware of washaways. In the wet months all of these forest roads can be come quagmires in parts and conditions depend on their use by the logging trucks.

The Palmerston Highway offers perhaps the best and least trafficked bitumen (narrow) road onto and off the tablelands. From Mills it drops to cross the Beatrice River at an exceptionally beautiful river crossing, then gradually climbs through and eventually out of the rainforest into coastal agricultural countryside (cattle and sugar). Along the way there is a track off to the north to view some falls. This is signposted but look out for it. Near the edge of the rainforest (CA718522) there is a man made clearing in the trees to provide a spectacular look down of a wild reach of the North Johnstone River 300 metres below. One story has it that the clearing was made by a forrester who was subsequently dismissed for his destructive act by the Forestry Department, the government body charged with the stewardship of what remains of the great rainforest.

Crawford's Lookout is wrongly placed on the 1:100 000 map. Milla Milla to Inisfail is an easy days cycling. Campsites are harder to find once down and into sugar country.

Eleven hundred metres. View to West of Milla lookout.

Humayun Tomb New Delhi

The Bicycle as a Tourist Medium

Cycling in India

by Goronwy Price

The bicycle is the best means of transport for any tourist in Asia, and the developing World. In most Asian countries, the car is used only by the wealthy elite. Ninety percent of the transport is by bike, bullock cart or foot.

My view of tourism is, that it should be to experience the life lifestyle of another culture. On the standard 'packaged tours', the only attempted contact with the local culture is talking to the barmen at luxury hotels. Travelling by bike, with the majority of the indigenous people, will allow for a far greater understanding of their lifestyle.

This year I have arranged a 550 mile bicycle ride to Northern India, to put my philisophy to the test. The trip for 15 people will leave Australia on December 31st 1977.

Usually on the way over to Nepal for the Himalayan walks I arrange, we stopover in India. Last year when staying in Delhi, India's capital, I had the idea of taking a bicycle out into the

I rode South West from Delhi to the town of Mathura – India's oldest city. In the five days spent riding, I saw more of India than on any of my five previous visits to the country.

The ride started in the early morning at the Ranjit Hotel in the centre of Delhi. The ride out of the Capital turned out to be the hardest part of the entire ride. A combination of the seemingly unnumerable roundabouts and one way streets, with the ever present hazard of getting run off the road by the motorised scooters, meant that I got hopelessly lost on a number of occasions. Luckily in the Delhi area, many people speak English and I did not have a lot of trouble getting directions.

Mathura lies on the main Highway between Delhi and Agra and once on the road the route was easy to find. Lines of cyclists silhouetted against the hazy early morning light; carts loaded with rice and vegetables on their way to Delhi for the morning markets; the round towers of the ancient Moghul forts, people calling out from the huts where they were stopping to drink tea – these are a few of the myriad of images that greeted me on the first morning.

Probably the most rewarding part of the ride was on the first day when I took off for 20 miles into the countryside to the Crater Lake – Lake Badkal. The Government of Haryana State have built a tourist lodge here and it seemed a good place to spend the first night. From the hotel I followed a bullock cart track right out into the countryside and I came across my first real Indian village.

Mahatma Ghandi once said . . . *Go to the villages, that is India, therein lies the soul of India*. Eighty percent of India's 600 million plus population still live in the villages and squalid as they are, cycling through a village is a fascinating experience. The people live in small mud houses, usually grouped around a central tree. The narrow streets are shared by women covered in jewellery of all descriptions, mud covered water buffaloes, traders and tea stall proprietors, flies and monkeys. It is certainly not a rural paradise, but equally it is not as depressing as the stereotyped idea everyone has of India.

Four days cycling (a better description would be ambling) from Delhi took me to Mathura. Mathura is said to be India's oldest and with Varanasi on the Ganges, her holiest city. Mathura is believed to be the birthplace of Lord Krishna, the goddess of love. Krishna's presence is remembered in the town by over 1000 temples and monuments.

Again you are faced with the contrast; how can a country spiritually as rich as India be faced with so many material problems.

Having to catch a plane home from Bombay, Mathura was the end of the ride for me last year. With the group this year I plan to go further.

A days ride from Mathura is Agra, the home of the Taj and other famous Moghul temples. A further day from Agra is Fetaphur Sikri, said to be the World's first ghost town. Soon after it was built by the Moghul Kings, Fetaphur Sikri had to be deserted owing to a lack of water. From Fetaphur Sikri the ride will head South West to the Swai Madkopur game sanctuary in Rajistan State and then North West to Jaipur. Jaipur, the main city in Rajistan, is famous as the 'pink city' as it is completely hewn out of the red desert sandstone.

The return from Jaipur to Delhi is by way of another game sanctuary – sariska. At Sariska they regularly lay baits for the tiger and it is reputed to be one of the best places in India to get a sight of these rare animals.

The total riding distance is to be 550 miles and I have planned the ride to take 18 days. Although the planned route is only a small square on the map of India, it is interesting because of the variety it contains in scenery, culture and flora and fauna. Jungles, desserts, savanna and rice paddies are all found along the route.

As one cyclist who is coming on the ride said in a statement that surely says it all . . . *it should be more interesting than riding to Dubbo*. . . . . .

Goronwy Price *Australian Himalayan Expeditions 19.8.77.*

Tools for Travelling

Compared to other mechanised modes of transport, the bicycle has only a few moving parts. This makes all but major structural (frame) repairs possible on tour. Replacement parts and the tools needed to fit them can be easily carried and even shared amongst a group. Try this check list.

Tools

Slotted head screw driver
Recessed head (Philips) screwdriver
8-9mm open ended spanner
10-11mm " " "
12-13mm " " "
14-15mm " " "
20cm(8") shifting spanner (adjustable wrench)
Cone spanner
2 tyre levers
Chain rivet remover
Spoke key
Small file
Pliers
Cotterless crank set tool kit
Pump
Freewheel removing tool
Oil
Grease
Clean up rag
Puncture repair kit.

Spares

Front and rear wheel spokes
Chain or spare links
Brake blocks
Brake cable
Derailleur cable
Tube or tubular tyre (s)
Rim tape
Pedal strap
Lamp bulbs.

Odds and ends

Handelbar tape
Length of lightweight cord
Section of old tube
Selection of nuts and bolts
Spare ball bearings

Tools can be efficiently carried in a cloth wrap up bag which is easily made from sturdy cloth at home and to your own requirements. Odds and ends and individual kits can be stored in a simple draw string bag.

When travelling in a group tools are best organised by having a large shared tool kit with individuals carring their own supplementary tools and spares. Often the transportation of tents, cooking gear and food is distributed by weight among the group's members. The large tool kit is best carried this way, however, the cyclist carring this kit has a responsibility to the group to ensure ready access to it.

The large kit should contain a basic set of spanners and a shifting spanner for holding bolts while tightening the nut. Some prefer to only carry a shifter as its adjustability means one tool in place of four. This tool is often in need when a non-standard nut is encountered. Care is required when using the shifting spanner as nuts are easily 'rounded' by sloppy adjustment of the jaws. Screwdrivers are often improvised with the blade of a pocket knife but a quality tool will ensure that the head of the screw is not damaged. This is very important with recessed head screws as a wrongly fitting tool will destroy the head and make its removal difficult.

For replacing broken backwheel spokes a freewheel removing tool will be needed. This is a non-standard tool varying with freewheel manufacture. Check to see which tool is required for your freewheel. A small file is useful for filing back the ends of a spoke if it protrudes through the nipple into the tube. Spare spokes can be carried by taping them to the frame. Spokes are manufacturered in a number of types, lengths and thicknesses. Take your bicycle with you to ensure a correct match when out chasing spares.

Almost half the number of moving parts in a bicycle are in the chain. Long wear needs good and regular maintenance. For removal of the narrow derailleur chain a rivet remover is necessary. One spare chain for a group of people on a long trip will quite often find a user. It is important to remember that a worn and stretched chain can damage a freewheel or chain set. Never fit a used chain and when replacing a freewheel or chain set always put on a new chain. For care of your equipment spare chains should be new chains.

Minor repairs can be done using limited tools carried by individuals. Spares should be carried with this kit. Make sure you have the correct cables for your brake and derailleur. These are also non-standard parts.

The most common form of breakdown is a punctured tyre. For this reason the repair kit is an essential item of personal equipment. Quick release hubs eliminate the need for a spanner to remove the wheel and tubular tyres (singles) the need for tyre levers. Tubular tyres are glued on to the rim and you will need to carry replacements as repairs to these tyres are best done at home. For wired or clincher tyres a spare tube can be used to speed up puncture repair.

Oil for chain and other moving parts can be carried in a small plastic bottle. The kind illustrated in the photo are 'Rotring' ink containers and have a long spout for tight applications.

A tool kit for a large travelling group

A supplementary kit with spares

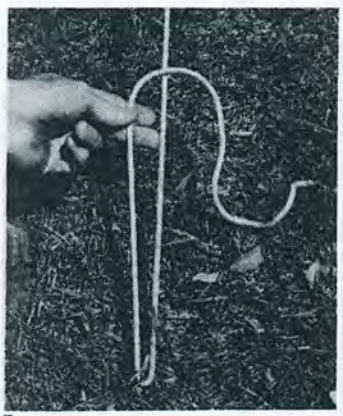
Spokes are best carried taped to the frame

Tents: A few useful details

Walled type tent

A type tent

Walled tent abdulled



1

2

3

4

The Rolling Hitch:
1. Tent is out of 'photo to the top. Peg is to the bottom. Start by making a half hitch on rope. 2. The first completed half hitch. 3 Do another half hitch on the peg side of the first half hitch. 4. finish the knot with a further half hitch on the tent side of the first and second half hitch. The completed knot will slide on the guy allowing for loosening and tightening of the tent.

Most tents are made from either lightweight natural or synthetic fibres. The natural fibres such as cotton/japara have decided advantages over synthetics such as nylon. When thread is woven into a mesh (fabric) it still has microscopic holes which will let in moisture in a heavy downpour. With nylon this is overcome by coating the back of the fabric with a thin layer of plastic. This will eventually break down with normal use. Reproofing is almost impossible as the nylon thread is smooth and will not 'hold' the proofing compound. Cotton is a natural fibre, it is rough surfaced like wool and when wet swells, shrinks in length and closes the fabric mesh. Extra fine woven fabrics such as storm-tite japara are excellent and with careful use will last a lifetime without proofing. Because cotton is a natural fibre it is subject to fungai and mildew if it is not aired when wet. If you have to pack away a wet tent when breaking camp, pack it loosly under the flap of your pannier bag so it will be aired. (That is unless you are travelling a muddy or dusty road.) An overcast lunch stop is all it takes to get a tent dry. Hang it up and it will air dry very quickly.

Tent guys and fittings are mostly synthetic nowdays. Nylon cord is more slippery than cotton cord but has the advantage of not shrinking when wet and making difficult knots on a wet morning almost impossible to budge. Only one knot is needed to efficiently errect a tent. It is called a rolling hitch, sliding or tent knot. This knot slides and allows the guy ropes to be tightened up when the wet tent has dried and is drooping.

Leaks

Some of the thinner varieties of cotton cloth act only to deflect the rain droplets down the fabric and if touched from the inside will drip from that area. This can be overcome by running your finger from that area down to the wall or floor of the tent. This makes the water flow down the inside of the tent and not drip on you. In a very heavy rain storm or severe conditions only the heavier or tighter woven fabrics will keep you dry. To avoid this you will need a fly sheet over the outside of your tent. This is a sheet of either nylon (for lightness) or japara which is erected about 10cm above the tent roof and acts to deflect the impact of the rain. It also acts as an insulator in hot weather providing a cooling air space directly above your tent.

Floors

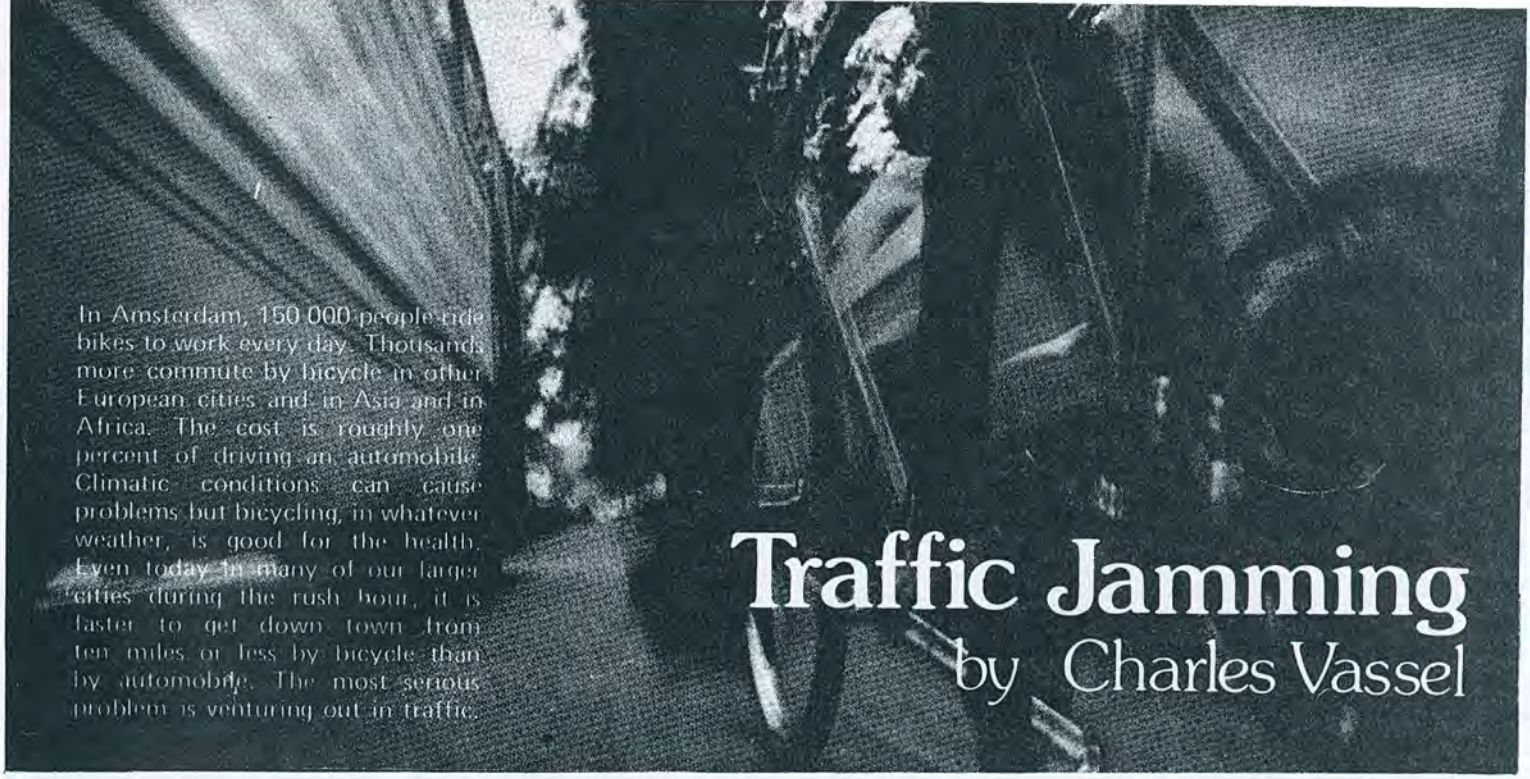
Most nylon tents these days come with a sewn-on floor. This is all very good if your tent is waterproof. If it is not then you will need to occasionally mop up the moisture or bail it out as sewn in floors seldom have drain holes in the right places. The best idea is to have a separate ground sheet which can also be used as a cape etc. Make sure when you erect the tent that the walls do not hang over the ground sheet.

Hot Weather and Insects

In hot weather a tent without a sewn in floor and openings both ends can be abdulled. This is done by pitching one side up like an awning. If there is a wind place the tent so it backs into the wind with the opened side away from the direction of the wind. For coastal climates mosquito netting can be fitted to the doors and be made removable by using tape ties or nylon press fastening. (The type that rips apart.)

Pegs and Poles

Steel pegs are far stronger but heavier than aluminium ones. Bulldog pegs, which are folded steel pegs are usually necessary for the main ridge supports. Telescopic poles are very useful especially in places where straight timber is scarce. There is enough needless destruction of growing trees without resorting to cutting saplings to errect a tent. Two trees can usually be found to tie the ridge of the tent between. Carry an extra length of cord for when the trees are far apart. Some tents can only be erected with telescopic poles of the correct length and type. When purchasing a tent check to see if pegs and poles are included.



In Amsterdam, 150 000 people ride bikes to work every day. Thousands more commute by bicycle in other European cities and in Asia and in Africa. The cost is roughly one percent of driving an automobile. Climatic conditions can cause problems but bicycling, in whatever weather, is good for the health. Even today in many of our larger cities during the rush hour, it is faster to get down town from ten miles or less by bicycle than by automobile. The most serious problem is venturing out in traffic.

Traffic Jamming

by Charles Vassel

The most important thing to remember is: a cyclist is entitled to use 2.5 metres (8 feet) of roadway from the gutter. (NSW Metropolitan Traffic Act, 1900). The cyclist is governed by the same rules of the road and **the same legal rights as motor traffic.**

When you are amongst those motorised monsters, be confident of your rights. Don't allow motorists to bluff you out of them. As the saying goes, *if there weren't any sheep, there wouldn't be any wolves.* This, of course, must be balanced with the knowledge that if there is an accident, you will end up the loser. Successful traffic riding requires a blend of determination and conciliation.

Successful City riding requires that you keep your hands near or on the brake levers at all times. Saving that split second to reach for the brakes could prevent an accident.

Be confident at all times; City traffic is not the place for hesitating or changing your mind half-way through a manouvre. Plan any manouvre well in advance. Convey your intentions to motorists in your vicinity by giving appropriate hand signals. When conditions permit, make the manouvre as quickly and smoothly as possible.

Be definite about what you are doing.
This creates less uncertainty and hence less irritation to the motorists that surround you.

Keep flow with the traffic at all times whilst not exceeding a speed which you cannot control. This reduces the number of vehicles you have to deal with and consequently the risk of an accident. You can usually achieve this in the city due to the constant traffic jams, but it does require that you keep a low enough gear to allow more power and acceleration, particularly at traffic lights.

Be alert, and consider all the possibilities. Be aware of the total surroundings. Consider: where traffic is behind you, what escape routes you could take if an accident should occur, and where you would go, should you and your bike part company. **Always** assume the worst, despite the fact that a driver is looking right at you. It may not register that you are there and he/she could drive right across your path.

Take extra care at intersections. Even if you have the right of way, letting a motorist proceed you to clear the way is a good tactic. Be wary of cars coming from behind and making a left turn in front of you.

When you are riding through queues of cars at traffic lights, and you intend to proceed straight ahead, move up between the gutter lane of cars and the next lane. Do not ride between the gutter and the first lane as you could get cut off by a motorist making a left turn without giving a signal. If you ride to the top of the queue, move in front of the car in the gutter lane. This makes him aware of your presence. However, if the light changes while you are still moving up, fall in behind the car along side of you. Never attempt to race in front of it as you may find yourself between two streams of traffic, tearing past at more than 30 map.

Use all of your 2.5 metres, (usually the width of one lane of roadway) as often as you can. This encourages drivers to use the other lane for passing instead of skimming within inches of you. Also, this allows you room to negotiate around obstacles in the roadway.

Cars and trucks pull out unexpectedly and without signalling. Look out for driveways, building entrances, construction projects, taxi ranks and other possible sources of vehicles. Remeber that you don't exist to many drivers. They look at you, an image is flashed on their brain, but they don't see you.

Although riding alongside parked cars is easier than fighting for your 2.5 metres of roadway, be over watchfull of opening car doors. Exhaust smoke and faces in rear view mirrors are good clues to a door about to be opened.

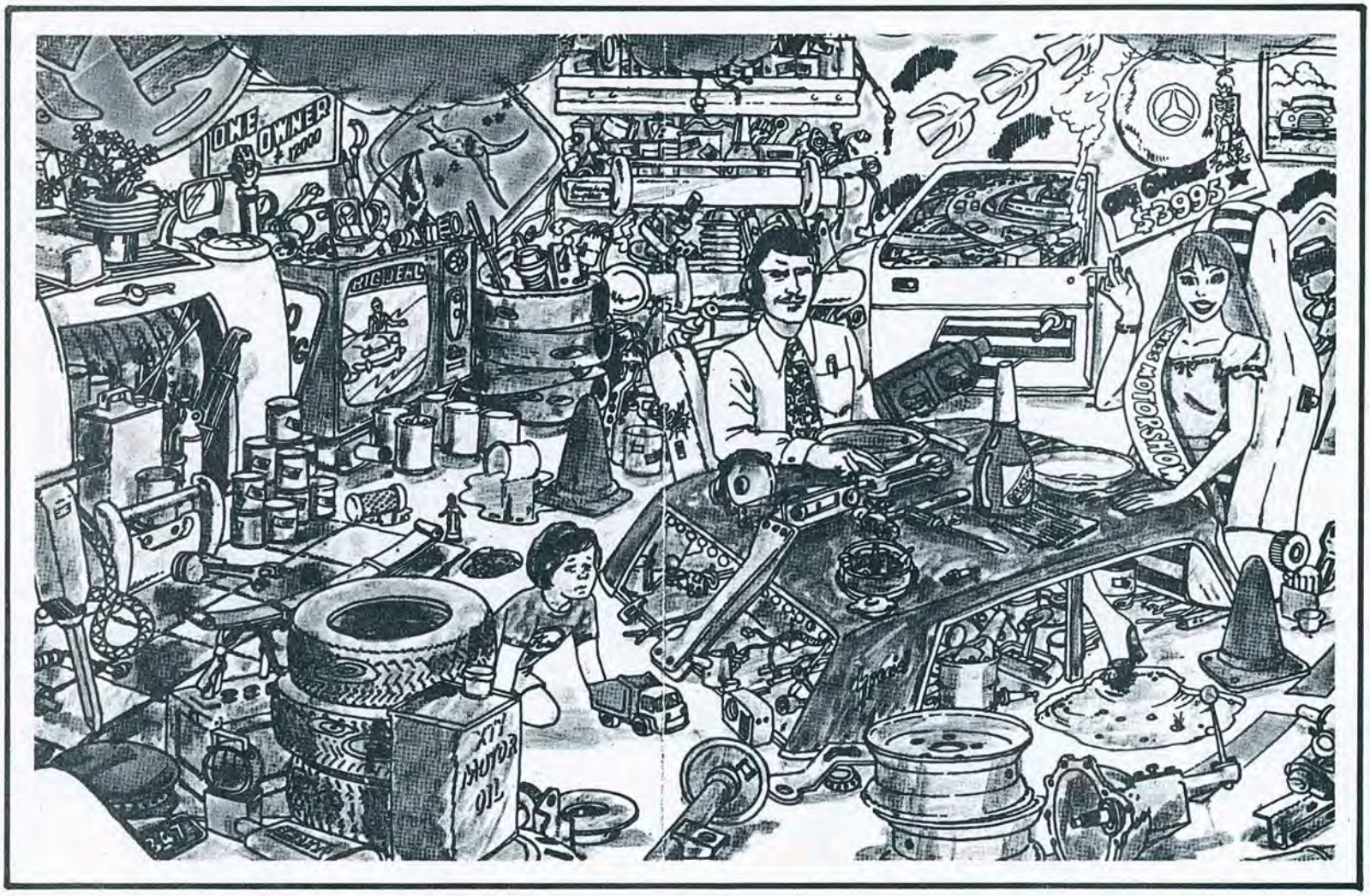
Watch the road surface for wet man hole covers, drain grates (which are just the right size to swallow most wheels) street washers or fresh rain, both raise the surface of oil out of the road and make it very slippery. Wet roads also mean less efficient brakes. Also look for potholes and glass.

When going over bumps, cables, etc, lift out of the saddle and keep your weight on the pedals and handlebars, allowing the bike to pivot underneat you.

Pedestrians should be closely watched as they are likely to do the last thing you'd expect of them. An accident with a cyclist often occurs in more serious consequences than they expect. Usually a yell or blow on the horn will wake them out of their sleep and send them scattering out of the way, but for the obstinate few, you will have to give the right of way.

Other cyclists, particularly children, should be overtaken with caution. If possible, make them aware of your presence before doing so.

Finally, a word or two to keep you more aware and alert while mixing with the motorist: It only takes one mistake or a lapse in attention for a split second to kill you. Good Cycling.



You too can dump your auto

by Keith Dunstan

There is an old theory that motor cars are a substitute for sex.

Those folk who have a particular passion for them wash their beloved automobiles daily. They have a nice soft chamois which they ease over the curves and smooth shapes. Marvellous for getting rid of all manner of frustrations.

Others have their automobiles, their Mercedes, their 12-cylinder Jaguars for the same reasons that the aristocracy of England once kept their vast formal gardens. This was an indication that they had surplus wealth and therefore were to be vastly respected.

But the most interesting automobile lovers of all are the young who indulge in the panel van, sinbin cult. The panel van clubs now run to thousands and the intensity of owner-devotion is fascinating.

The passion is for interior decoration. Some are lined entirely with lambs wool, some are decorated with bottles, bars, chrome as if they were trying to outdo the St George Leagues Club, others have wooden panelling in the style of the Melbourne Club.

I have seen them with stoves, fireplaces, refrigerators, a working fountain and they all have hi-fi, 8-track stereo, and very often colour television.

I see great similarities between the panel van and the cubby house we used to build in the garden. Here's the spot where one can escape, hide, lock oneself away from the agonies of the world outside. Yes, the panel van is like Snoopy's security blanket.

Are you getting the picture? You are looking at a 20th century freak, an Ibsen 'Enemy of the People', an automobile hater.

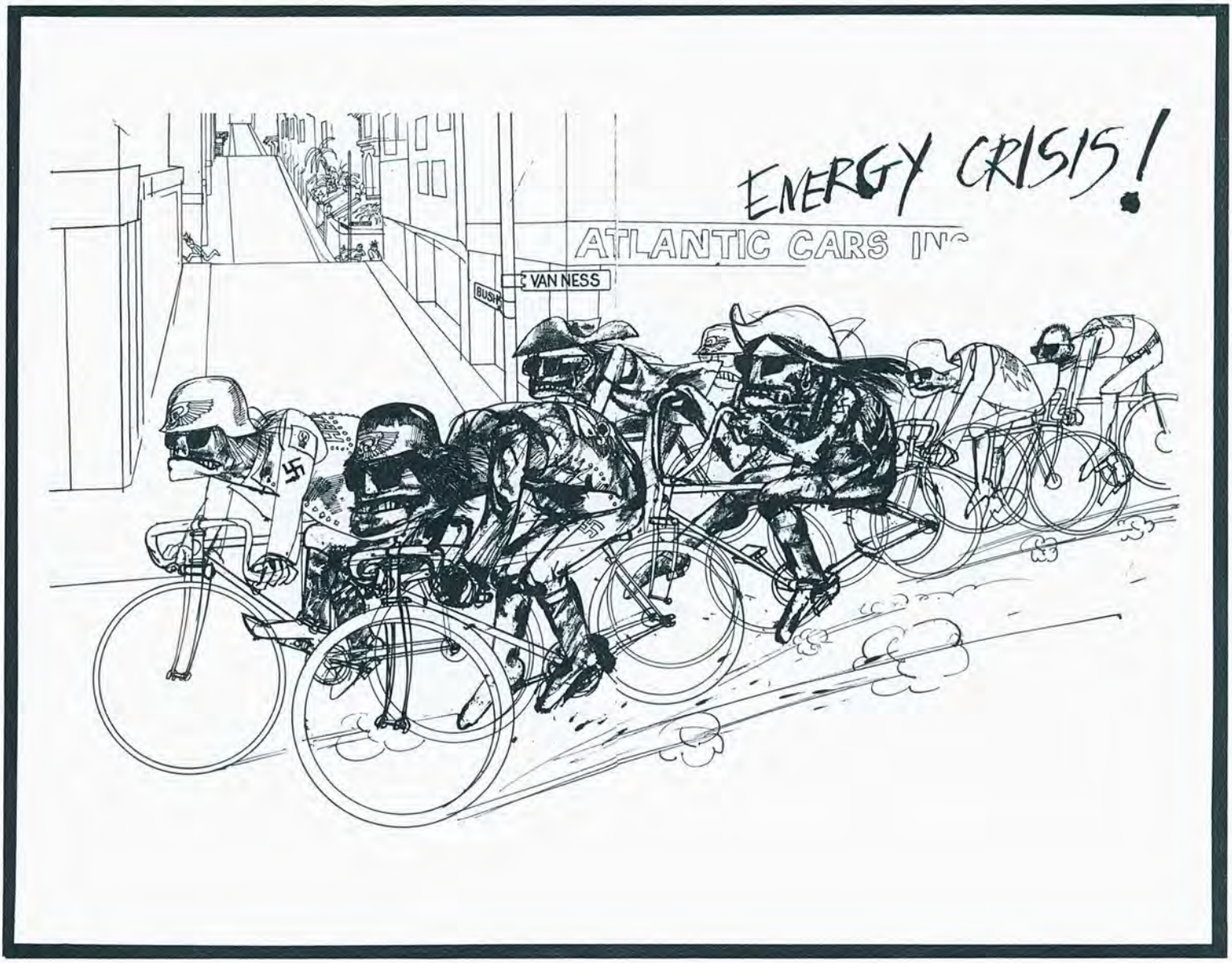
My dislike for the motor car began quite gently back around 1970. There was a mass strike by the tram and railway unions, so I decided to ride a bicycle to work. The speed and ease with which I covered the seven miles from East Malvern was astonishing . . . half an hour from door to door.

There was a feeling of almost insufferable smugness as I passed the vast line-up of bumper-to-bumper, halted, panting metal in Alexandra Avenue, and again all along Brunton Avenue. There was no trouble to park my bicycle when I arrived at the office. I could even take it upstairs and stow it beside my desk.

Then there was the ease of getting around town. I had it in the foyer of the bank, on the steps of the Southern Cross Hotel, even tied to a telegraph pole outside Georges.

So you see I never got over it and I have been riding my bicycle to the city ever since.

Quickly, however, I discovered that the cyclist is a member of a depressed minority, even an Arab in Tel Aviv would feel more comfortable. A prime example is the sign you see on freeways NO PEDESTRIANS, CYCLISTS OR ANIMALS.



But if you are tempted to take up this form of transport, let me carefully elaborate the advantages and disadvantages of this form of energy output.

Advantages

Fast – We have proved time and again that it is the fastest way to town, car, train, or tram, door-to-door in traffic situations.
Fun – It really is a joyful experience, riding a bike. You see your town. Get the sights, smells and feel of your surroundings that you never get by car.
Healthy – It cures aches and pains. I had persistent hip rheumatic pains, not any more.
Weight Reducing – In two years I have lost 1½ stone and can drink beer again with impunity.
Freedom – It will go anywhere except on water.
Cheap – Sell your car, ride a bike and save $3000 a year.

Disadvantages

Terror – Frequently motorists try to frighten you.
Pollution – Cars. You have to smell them.
Personal Pollution – Summertime, people sit a little further away.
Weather – You get wet and you become the saviour of the dry cleaning industry.
Social Consequences – Friends tell you daily that you are out of your mind. At times you even suffer a sense of inferiority.

So you get the feeling you are slightly less lovable than a stray dog, even though nearly every freeway has an emergency lane which would be admirably suitable for bicycle riders.

In the past six years, I must confess there has been an improvement. Many car drivers have started to look more kindly upon us. Good heavens, only a fortnight ago one was courteous enough to give me the right of way.

However, nine out of ten of these steel box pilots exercise their power right, ruthlessly cut you off going round corners, crossing lanes and utterly assume you shouldn't be there. It is an interesting exercise to observe behaviour. You know how dogs tend to take on the personality of their masters? OK car drivers tend to take on the personality of the car they drive. There is usually little harm in Toyotas, Minis, low powered Cortinas, Holdens and Toranas. I have been treated kindly by Rovers, Peugeots and Citroens.

But beetle Volkswagens are infamous. Look out for anything GT, anything that sports a stripe. These are driven by paranoid demons. Valiants, for some reason, are utterly nasty and those who drive Mercedes Benzes are under the illusion that they utterly own the road.

Particularly I advise you to duck for cover if you see a Mercedes driven by a blue rinse matron. Taxis are too busy earning a dollar to care for cyclists but on the other hand truckies can be extraordinarily considerate. I nearly always get a wave from the truckies.

Ah yes, but with the great energy collapse coming closer daily, one thinks of the day of the great bicycle second-coming at hand and one loves to peddle out a few simple truths, such as:

It is possible to produce 100 bicycles from the materials used to produce one small European type car.

When the human being rides a bicycle he is riding the most efficient device ever created. His travelling efficiency is supreme among both animals and machines. He consumes a mere 0.15 calorie-gramme-kilometres.

The nearest to him in efficiency is the fish and he is way ahead of jets which are 0.6, and the monstrously inefficient motor car which is around 0.6. The pollution he spreads around the environment is only the sweat on his brow.

But when I am in a difficult automobile mood I like to read a gentleman named Ivan Illich who wrote a famous book called *Energy and Equity*.

Mr Illich actually worked out the amount of energy you need to exert to keep that damn automobile on the road. He calculated its real cost.

That is, how much it cost to purchase a car in real terms. How much of the working day was involved in buying the motor car, insurance, registration, tolls, petrol, repairs, parking tickets and time spent in driving and parking. He didn't work out the hospital expenses, the carnage, that's another thing.

But he came up with the figure that the typical American male devotes 1600 hours a year to his car. He spends four of his sixteen waking hours on the road or gathering resources for it.

So the model American spends 1600 hours of his resources on his car. What is the average distance? — 7500 miles.

Work that out. Average speed, 5 mph. He'd be better off on a bicycle.

As I write there is a petrol crisis in Sydney and motorists are asked to buy petrol on alternate days according to odd or even numbers on their number plates. The crunch is coming. What are we to do with all these cars, come Crunch Day.

You could carefully seal your car, pump it full of water and use it as an aquarium.

Sound proof it, put it in the living room and use it as a lovely quiet isolation centre while the kids are playing their hi fi records.

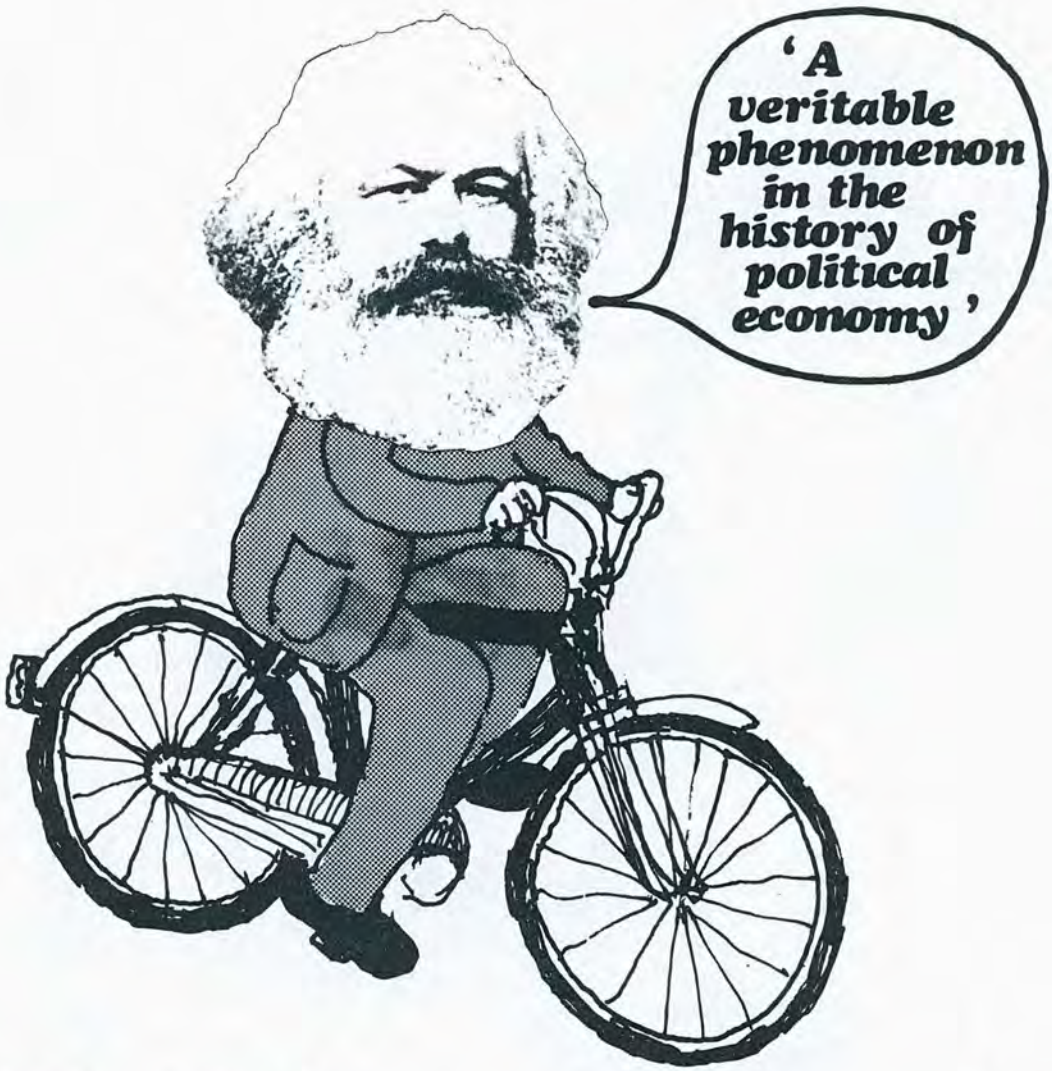
Turn it into a cubby at the bottom of the garden. Make it into a teenage telephone box. Cut the roof off, fill it with earth and turn it into a kinky rockery garden.

Fit it with beds and use it for Aunty May and Uncle Bill when they come to stay at Easter.

Cut a hole in the middle and use it as a Henry Moore Sculpture.

I am sure you have even better ideas.

Keith Dunstan is a columnist with Melbourne's *Sun News-Pictorial*. Reprinted from *Habitat Australia*, Volume 4 Number 5 April 1977.



The Politics of the Bicycle
a brief note
by Andy Fitzsimonds

A look at the history of cycling, quickly reveals some of the reasons why cycling is so poorly catered for throughout the developed world.

Originally the plaything of the *Regency Buck,* cycling became a fashionable recreation of the leisured classes of Europe. This image slowly changed as bicycles became cheaper. The bicycle took on a *cloth cap* image – a form of transport for the working person.

The few provisions that were then made for cycles were soon swept away in the headlong rush to embrace the new God-head – the motor car. This rush was greatly aided, I might add, by those who spotted the incredible profits to be made from such a wasteful form of transport.

In more recent years, even the working classes have been taught to distain the bicycle. They have become the exclusive domain of kids, a group with perhaps the least political voice of all. As the province of kids and workers, cyclists and their needs have largely been ignored. Often they are positively discriminated against.

Strategies for Change

The late 60's and 70's have seen a revival of cycling within other groups. The bicycle has gained an *eco-freak* image. Cycling has returned to the upper and middle classes. Along with an increased awareness of ecological issues, the bicycle has become a potential political issue. Many powerful groups both inside and outside government are now, at least partially susceptible to ecological arguments. It is the responsibility therefore, of all cycling activists to ensure that the needs of the cyclist becomes an important political issue at all levels of the community. However, it must be remembered that any advance cyclists might make is likely to be at the expense of the motor and oil industries; and these industries are possibly the most powerful and best organised in the world – the picture looks black indeed.

Speaking to the converted means not having to re-hash the numerous advantages of cycling. However, it would seem that we must establish well organised and mass pressure groups so that adequate provisions for cycling can become a reality.

The potential cycling activist is caught in a vicious circle. At present most cyclist's demands revolve around safety. Only when cycling is made safer, will we be able to convince large numbers of people to get off their bums and onto a pushbike.

What To Do

Experience to date suggests that organisation is best done on two levels. Localised pressure groups who focus on local requirements with which they are closely associated are needed. On the second level, a state or city wide back-up organisation is needed to provide local groups with technical advice and information. This group acts as a co-ordinating body ie: the Bicycle Institutes of NSW and Victoria.

So much for theoretical structures; these are ahcieved slowly. There are several pitfalls which cycling activists should try to avoid. We must struggle to avoid situations where decisions are made on cycling facilities – location and design – by non-cyclists.

It may appear that anything is better than nothing, but this is not the case for cycling. Unused facilities are ammunition to be used against us. Most local government engineers seem to think that they can whip up a bicycle rack in ten minutes. If they do, it will be a poor one. Any experienced cyclist knows that bicycle technology can be quite sophistocated. Realising this, it is important that cyclists be involved in all levels of decision making about cycles.

The Long Term

It seems to me that the potential of bicycles is not widely recognised. Bicycles can and often do represent a daily reminder of an alternative to our present wasteful and destructive means of personal transport. More visible than most *soft* technology, the bicycle can become a tool in changing peoples' attitudes towards their own life styles and the environment in general.

INDIVIDUAL ACTION

Use your bicycle as your major means of transport supplemented by public transport (rail, ferry) where necessary. Write to the minister for transport urging the installation of bicycle racks at stations and ferry terminals.

Use your car only in emergencies or where its load carrying capacity will be used efficiently. Consider group ownership of a motor vehicle within families and neighbourhood groups.

Encourage the formation of car pools and bicycle exchanges with neighbours.

The purchase of luxury goods (second TV set) – this money can be used to buy bicycles. **The comfort of television is very much like the automobile in that both are isolating.**

Discourage membership in auto clubs which actively lobby for freeways and **extension** of road systems.

Join bicycle oriented groups like The Bicycle Institute of NSW, BI Victoria, BI Queensland, Pedal Power ACT, Pedal Power Tasmania (see list on page 2).

Refrain from purchasing any of the phalanx of motor magazines and subscribe to bicycle magazines like *Freewheeling Australia* and *National Cycling* – the above mentioned groups all have regular newsletters.

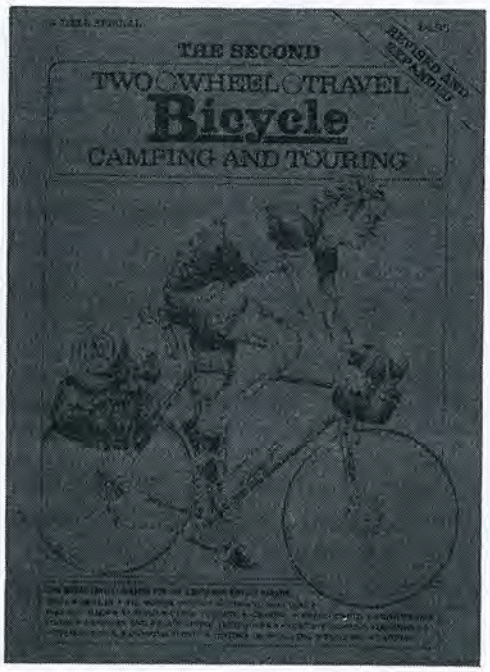
Discourage toys and games that imitate the culture of the automobile (Autopia) and encourage manufacturers to develop and produce bicycle games instead.

Vote for politicians who are sympathetic to the desires and needs of bicyclists. Use your influence to educate the politicians who are ignorant of the bicycle.

Start a cycling club in your neighbourhood, the kids need it it. You will influence and encourage more people to rediscover the bicyle that way.

Cyclists ride for a cleaner safer city. Opera House Rally c.1976.
Photo Pat Fiske.

Books about Bicycling



Two Wheel Travel — Bicycle Touring

This would have to be the most comprehensive book on cycle touring and camping available in this country. Covers such subjects as long distance riding techniques, societies and associations, gearing, carrying loads, equipping your bike for touring, tents, sleeping bags, maps, stoves and food. A must for anyone thinking about touring. Paperback, $5.40, 192 pages (10" x 14").

Bicycle Care and Repair

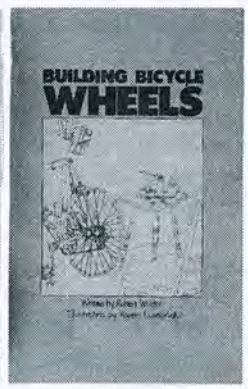
by B L Seager

After a brief rundown on general maintenance he devotes the next one third of the book to a detailed description of the complete overhaul of various brands coaster brakes and hub gears. The next section deals with derailleurs which is covered reasonably well. The remainder of the book is occupied by brief sections on crank assemblies and sprocket clusters, frame and fork aligning, building and truing wheels and short cuts on common repairs. Fully illustrated with blow up diagrams and sales numbers for parts. Paperback, $4.95, 144 pages.

How to Fix Your Bicycle

by Helen Garvy

A very basic step by step guide to general maintainence and repairs. Strictly for those who have never put a spanner to bike. Paperback, $1.50, 64 pages.



Building Bicycle Wheels

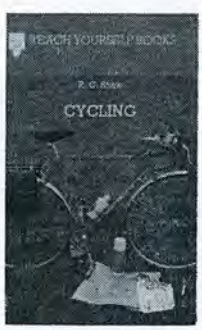
by Robert Wright

A complete guide to building your own wheels. Explains the various spoking patterns, their use and step by step instructions as well as a trouble-shooting and repairs section. Paperback, $2.35, 46 pages.

Teach Yourself Cycling

by R C Shaw

The author, a renowned British cyclist, has compiled a handy, compact guide to the secrets of easy cycling and the necessary understanding of your bicycle, it's function and design. Paperback.



Round Town Cycling

by Ronald Pruden

Includes tips for traffic jamming, lightening the load, general maintenance and care of your machine, clothing, equipment and a chapter on swearing of cars. Paperback, $3.10, 108 pages.

Book of Bikes and Bicycling

by Dick Teresi

360 pages of general information on all aspects of cycling from selecting a bike, cycling techniques, touring, sporting and basic maintenance but unfortunately, it has no index, only a contents page, which makes finding something a bit difficult. Hardcover, $11.70.

The Piccolo Bicycle Book

by Richard Ballantine

A child's version of *Richard's Bicycle Book*, covering the same subjects in a more simplified form and with the addition of sections on games, cycle paths and historic bikes. Paperback, $1.75, 190 pages. Age group 7-14.

Richard's Bicycle Book

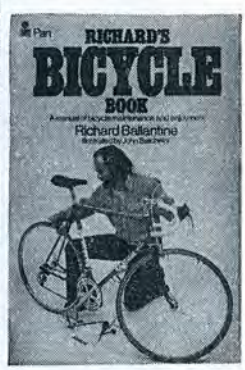
by Richard Ballantine

Bicycle selection, riding, touring, racing, elementary maintenance, history, lore and general enjoyment — all presented clearly and straightforwardly in a single, inexpensive volume. This is a 'best buy' if you can justify owning only one bicycle book, or if you want to round out your cycling reference library. Paperback, $3.50, 320 pages.

Bicycling For Fun and Health

by Lyle Engel

A brief history, then offers an explanation of the derailleur gear with a chart for figuring ratios, advice on how to properly fit the bicycle to your personal measurements, gives some basic hints on riding technique, offers help on maintenance, servicing and repairs, and explains the different types of bicycles and their uses. Paperback $5.50, 160 pages.



All of these books are available in 1978 from the Bicycle Resource Centre. BINSW, 399 Pitt Street, Sydney. Mail orders please enclose donation for postage.

Bike Shop Directory

Sydney N.S.W.

SUBURB	STREET	PHONE	Mon-Fri	Thurs Night	Saturday	Sunday	NAME	Repairs	Hire	TYPE	SPECIALTY
Ashbury	88 King Street	799 5204	9.00-6.00	X	9.00-1.00	11—1	Ashbury Cycles	✓	X	Cycle	Racing & General
Ashfield	186 Liverpool Rd	798 9797	9.30-5.00	8.30	9.00-12.00	X	Blacklands	✓	X	Sports	General
Auburn	123 Auburn Rd	649 8481	9.00-5.30	9.00	8.30-12.00	X	Lennie Rodgers	✓	X	Cycle	Lightweight Frme
Bankstown	57 Restwell St	76 1643	8.30-5.30	9.00	8.30-12.00	X	Jay Jay	✓	X	Sports	General
Bankstown	342 Chappel St	76 2539	8.30-5.30	9.00	8.30-12.00	X	Jay Jay	✓	X	Sports	General
Belmore	174 Burwood Rd	750 9813	9.00-5.00	X	9.00-12.00	X	Belmore Cycles	✓	X	MotorB & Cycle	General
Beverly Hills	423 King Georges Rd	57 5180	8.30-5.30	8.45	8.30-12.00	X	Beverly Hills Spts	✓	X	Sports	General
Blacktown	Shp 5, Alpha St	621 8158	8.30-5.30	9.00	8.30-12.00	X	Blacktown Bi Ctr	✓	X	Cycle	Racing & Touring
Blakehurst	617 Princes Hwy	547 1812	9.00-5.30	8.30	9.00-4.00	X	Fit & Free	✓	✓	Cycle	General
Bondi	109 Bondi Rd	387 1969	8.30-5.30	7.00	8.30-1.00	X	Bondi Cycle Ctr	✓	X	Cycle	Repairs
Brookvale	513 Pittwater Rd	93 5665	9.00-5.00	X	9.00-12.30	X	Moores Cycle Wks	✓	X	Cycle	General
Cabramatta	26 Railway Pde	727 2483	8.30-5.00	9.00	8.30-12.00	X	Cabramatta Sports	X	X	Sports	New bikes & prts
Cabramatta	44 Arthur St	72 2107	9.00-5.30	9.00	8.30-12.00	X	Baglee & Weston	✓	X	Cycle	General
Caringbah	360 The Kingsway	525 7042	8.30-5.30	9.00	8.00-12.00	X	Jim Mitchell's Sprts	X	X	Sports	General
Chippendale	151 Broadway	211 3117	9.00-5.00	X	9.00-12.00	X	Victa Cycles	✓	X	Cycle	General
Concord	104 Major's Bay Rd	73 2526	8.30-6.00	X	8.30-2.00	X	Concord Sports	✓	X	Sports	General
Cronulla	46 Cronulla St	523 5828	9.00-5.30	9.00	9.00-12.00	X	Sprts & Toy Wld	✓	X	Sports	General
Crows Nest	413 Pacific Hwy	43 4179	8.30-5.15	8.30	8.30-12.00	X	Lynch & Gray	✓	X	Sports	General
Dee Why	3 Howard St	98 6414	9.00-5.00	9.00	8.30-12.00	X	Dee Why Sprts	X	X	Sports	General
Dulwich Hill	460 New Canterbury Rd	569 2845	9.00-5.30	7.00	9.00-12.00	X	Dulwich Hill Cycle Centre	✓	X	Cycle	General
East Hills	100 Park Rd	771 5877	12.00-5.30	X	9.00-3.00	X	V. Carne	✓	X	Cycle	General
Eastwood	265 Rowe St	85 6407	9.00-5.30	9.00	8.00-12.00	X	E. Cycle Centre	✓	X	Cycle	General
Enfield	180 Liverpool Rd	747 4175	9.00-5.30	7.00	9.00-12.00	X	Omega Cycles	✓	X	Cycle	General
Engadine	10 Station St	520 4078	9.00-5.30	8.00	8.30-12.00	X	Sth Side Cycles	✓	X	Cycle	General
Epping	24 Oxford St	86 3163	8.45-5.30	9.00	8.30-12.00	X	Colins Cycle Cntr	✓	X	Cycle	General
Fairfield	18 Court Rd	72 1380	8.30-5.30	9.00	8.30-12.00	X	Baglee Cycles	✓	X	Cycle	General
Fairfield Heights	224 The Boulevarde	604 4102	9.00-5.00	9.00	9.00-12.00	X	Fairfield Heights Toy & Sports	✓	X	Sports	General
Gladesville	28 Pittwater Rd	89 3694	9.00-5.00	X	8.30-12.00	X	Taylors	✓	X	Hrdw	General
Greenacre	134 Waterloo Rd	759 8766	9.00-5.00	8.00	8.00-12.00	X	Slim Ward	✓	✓	Cycle	General
Guildford	273 Guildford Rd	632 8429	8.00-5.30	Summer 9.00	8.00-12.00	X	Olympic Cycles	✓	X	Cycle	General
Hurstville	372 Forrest Rd	57 5187	8.30-5.30	9 00	8.30-12.00	X	Sportoys	✓	X	Sports	General & tradeins
Hurstville	145 Forrest Rd	57 2160	8.30-5.15	8.00	8.00-12.00	X	Royal Star Cycles	✓	X	Cycle	Racing
Killarney Heights	Tramore Place	451 6342 451 9334	8.30-5.30	8.00	8.30-5.30	X	Alstar Cycles	✓	✓	Cycle	New and Reconditioned
Kingsford	412 Anzac Pde	663 3644	8.00-5.30	9.00	8.00-12.00	X	Europa Cycles	✓	X	Cycle	Touring
Liverpool	Memorial Ave	601 3477	9.00-5.30	9.00	8.00-12.00	X	Bicycle Centre	✓	X	Cycle	General
Liverpool	34 Terminus St	663 3644	8.00-5.30	9.00	8.00-12.00	X	Europa Cycles	✓	X	Cycle	General
Liverpool	92 Moore St	602 8540	8.30-5.30	9.00	8.30-12.00	X	Universe Cycles	✓	X	Cycle	General
Manly	87 Pittwater Rd	977 2036	9.00-5.30	9.00	9.00-12.00	X	Wheeler Cycles	✓	X	Cycle	General
Maroubra Junction	805 Anzac Pde	349 2154	8.30-5.30	9.00	8.30-5.00	X	Cycle & Sports	✓	X	Sports	General
Marrickville	298 Illawarra Rd	559 1143	9.00-5.30	9.00	8.30-1.00	X	Mick Mazza	✓	X	Cycle	Frame Building
Mascot	210 King St	667 1741	Tues-Fri 8.30-5.00	X	8.00-12.00	X	Tollis Cycles	✓	X	Cycle	General
Merrylands	Merryland Rd	682 3970	8.30-6.00	Summer 9.00	8.30-1.30	X	Holroyd Cycles	✓	X	Cycle	General
Miranda	Clock Crt, Shop 3 Miranda Fair	525 6293	9.00-5.30	9.00	9.00-12.00	X	Sports & Toys	✓	X	Sports	General
Mona Vale	5 Darly St	997 3410	9.00-5.30	Xmas 9.00	9.00-4.00	X	Surfside Cycles	✓	X	Cycle	Lightweight Cycles
North Rocks	56 Westfield Shopping Town	872 1919	9.00-5.30	9.00	8.30-12.00	X	Wheels'N'Things	✓	X	Sports	General
Padstow	67 Howard St	774 1971	9.00-5.30	8.00	8.30-12.00	X	Beacon Cycles	✓	X	Cycle	General
Panania	175 Tower St	X	8.30-5.45	6.30	7.30-1.30	X	Panania Cycles	✓	X	Cycle	General
Parramatta	146 Church St	635 8297	9.00-5.30	Summer 9.00	9.00-12.00	X	SJH Cycles	✓	X	Cycle	General
Parramatta	458 Church St	630 1491 630 3143	7.00-6.00	9.00	7.00-12.00	X	Universal	✓	X	Cycle	General
Pendle Hill	221 Wentworth Ave	636 3004	9.00-5.00	8.00	9.00-12.00	X	Spokes Cyclery	✓	X	Cycle	Racing and Special Imports
Punchbowl	745 Punchbowl Rd	70 2502	8.30-6.00	9.00	8.00-1.00	X	Jack Walsh Cycles	✓	X	Cycle	Service (urgent repairs or equipment 759 3687)
Pymble	961 Pacific Hwy	44 4552	9.00-5.30	Summer 9.00	8.30-12.00	X	Pymble Cycles	✓	X	Cycle	General
Ramsgate	187 Rocky Point Rd	529 7204	9.00-5.30	X	8.30-12.00	X	Albert Cornish	✓	X	Cycle	General
Randwick	28 Clovelly Rd	X	10.00-5.00	X	8.30-6.00	8.30-6	Pedals & Wheels	✓	✓	Cycle	Hire
Randwick	11 Clovelly Rd	399 9060	Wed-Fri 10.00-5.00	X	8.00-6.00	8.00-6	Hysal Cycles	✓	✓	Cycle	Hire
Randwick	48 Clovelly Rd	398 5027	9.00-5.00	X	9.00-5.00	9.00-5	Centenial Cycles	✓	✓	Cycle	Hire
Revesby	Revesby Place	774 2816	9.00-5.00	X	9.00-12.00	X	Revesby Sports	✓	X	Sports	General

Rockdale	9 Frederick	599 3633	9.00-5.00	9.00	8.30-12.00	X	Chappman's Sports	✓	X	Sports	New&second hnd
Rozelle	727 Darling St	818 1181	9.00-5.30	9.00	9.00-12.30	X	Sunshine Cycles	✓	X	Cycle	Frame building
St Marys	59 Queen St	623 1157	9.00-5.30	8.30	9.00-4.00	9.00-4	Vision Cycles	✓	X	Cycle	General
Seaforth	Sydney St	94 2902	No Tues 8.30-5.30	X	8.00-4.30	9-12.30	Seaforth Cycles	✓	X	Cycle	General
Stanmore	322 Parramatta Rd	X	8.30-5.30	X	8.30-12.00	X	Capital Cycles	✓	X	Cycle	General
Surry Hills	368 Cleveland St	698 1306	9.30-6.00	8.00	9.30-2.00	X	Freewheel	✓	X	Cycle	Touring
Sutherland	Shop 384, President Ave	521 3067	9.00-5.30	X	8.00-12.00	X	Durban Cycles	✓	X	Cycle	General
Thornleigh	276 Pennant Hills Rd	84 2033	8.30-5.30	Summer 9.00	8.30-12.30	X	Cycle Sport International	✓	✓	Cycle	Frame Building (will open by appointment)
Turramurra	1257 Pacific Hwy	44 1479	8.00-5.30	X	8.00-12.30	X	T. Cycle Centre	✓	X	Cycle	Repairs specalist
Waterloo	939 Bourke St	XX	9.00-5.00	X	11.00-2.00	X	Manpowered Vcls Vehicles	✓	X	Cycle	Custom made frames and bike trailers.
Wentworth-ville	339 Western Hwy	631 8615	8.30-5.30	X	8.30-12.00	8.30-5	Universe Cycles	✓	X	Cycle	General
West Ryde	1065 Victoria Rd	85 5836	8.00-5.30	8.30	8.30-12.00	X	Universe Cycles	✓	X	Cycle	General
Willoughby	195 High St	958 1465	9.00-6.00	8.00	9.00-3.00	X	Ian Frew	✓	X	Cycle	General
Wynyard	25 Clarence St	29 1287	8.30-5.30	8.30	8.30-12.30	X	Clarence St Cyclery	✓	X	Cycle	Wide Range access.
Yagoona	454a Hume Hwy	709 7927	9.00-5.30	X	9.00-12.00	X	Yagoona Cycles	✓	X	Cycle	General

N.S.W. Country (including the A.C.T.)

LOCALITY	STREET	PHONE	NAME
Adamstown	617 Glebe Rd	52 5959	Hadley R.I.
Armidale	114 Marsh St	72 3718	Armidale Bicycle Centre
Albury	449 Dean St	21 5083	Treloar Cycles
Bowral	333 Bong Bong St	61 2038	Bong Bong Toys Cycles
Bundanoon	9 Church St	Bndn 43	Ye Olde Bicycle Shope
Ballina	191 River Rd	86 2276	Ballina Cycle Centre
Broken Hill	195 Argent	BH 3707	J. Windham Pty Ltd
Bathurst	105 Stewart St	31 4703	Latham Motor Cycles
Bathurst	66 George St	31 1756	W. J. Sweeney
Broadmeadow	25 Belford St	62 2957	Broadway Hardware
Boolaroo	10 Main St	58 1455	Alan Craig & Cycle
Beresfield	27 Lawson St	66 2141	L. Stead
Canberra (City)	Aruna St	47 6721	Canberra Toyland
Canberra	34 Northbourne	48 6741	Geoff Emerton
Cessnock	47 Vincent St	90 1271	Coalfields Bicycle Centre
Campbelltown	Waminda Rd	25 7362	Fishers Ghost Bicycles
Cooma	81 Sharp	2 2222	Cooma Sports Store
Cowra	37 Kendal	42 2810	John Rablah
Casino	107 Barker	62 1687	Gillett's Cycle Works
Casino	98 Centre St	62 1174	T. Mulherin
Coffs Harbour	Park Ave	52 3144	R. K. Green
Corimal	187 Princes Hwy	84 1277	Jarrett Electrics
Dickson	11 Woolley St	48 8861	Canberra Bicycle Centre
Dickson	18 Dickson Place	49 7158	John Purnell
Ettalong	203 Memorial Ave	43 1906	Ettalong Bike Shop
Forbes	Rankin St	52 2209	Breaden's Tyre Service
Forbes	1 Cross St	52 1494	Debenham
Griffith	Jondaryan Ave	62 2148	Tom's Cycles
Gosford	129 Mann St	25 1834	P & G Cycles & Mowers
Gosford	264 Umna St	41 3394	Doreen's Toy & Sports
Grafton	106 Fitzroy St	42 4165	Norris Cycles
Grafton	127 Fry St	42 2110	E. E. Schafer
Grafton	145 Prince St	42 2106	E. E. Schafer
Goulburn	60 Clinton St	21 1866	GBS
Goulburn	113 Auburn St	21 2338	Turner's Cycle Centre
Hamilton	145 Beaumont St	61 5075	Tresidder, Dick
Kyogle	41 Summerland Way	32 1339	Unicomb Cycles
Kiama	47 Collins St	32 2991	Kiama Cycles
Kingswood	196 Grt Western Hwy	31 5911	Kingswood Cycles
Katoomba	Katoomba St	82 3180	Katoomba Toy & Hobby
Kingston	Jardine St	95 9741	G. Emerton Sports & Cycles
Leeton	16 Kurrajong Ave	53 2638	Hopwood's Toyland
Lismore	85 Keen St	21 4152	Harris Cycle Co
Lavington	320 Urana Rd	25 4177	Lavington Cycles
Lake Illawarra	78a Addison Ave	96 1977	Alf Overton
Murwillumbah	Nullum St	72 2158	Vic Wade & Co
Macksville	River St	68 1374	A. J. McMahon
Muswellbrook	32 Market St	43 2073	King Cycle Works
Merewether	158 Glebe Rd	61 3892	E. R. Foster
Maysfield	246 Maitland Rd	68 2052	Stead Cycles
Manuka	Furneaux St	95 1191	John Purnell
Newcastle	484 Hunter St	2 3204	Newcastle Alpine Centre
Newcastle	6 Parby St	2 5245	Malvern Star Stalls
New Lambton	213 New Lambton St	52 1886	V. C. Barnes
Nowra	16 East St	2 0722	The Bike Shop
Orange	Kite St	62 6511	Bennett & Wood Ltd
Orange	116 Summer St	62 3670	Ron Boulton
Phillip	Woden Plaza	82 1535	John Purnell
Phillip	5 Townshend St	81 5538	Big 'B' Bicycle Sales
Parkes	336 Clarinda St	62 2999	W. T. Hawken
Penrith	213 High St	21 0677	F. G. Taylor
Penrith	536 High St	21 2179	J. A. Ross
Queanbeyan	130 Monaro St	97 1942	Manaro Sports Centre
Raymond Terrace	26 King St	87 2301	J. Kriz & Son
Richmond	173 Windsor Rd	78 1264	Richmond Cycle & Sports
Singleton	145 John St	72 2213	N. R. Lambert
Singleton	165 John St	72 2501	O. B. Hatherly
Springwood	135 Macquarie Rd	51 2579	Springwood Sports & Toy
Springwood	Springwood Ave	51 3328	Bowman Bicycles
Taree	96 Manning St	52 1251	Norm's Cycles & Chainsaw
Tamworth	310 Peel St	66 2825	Reg Smith Cycles
Unanderra	35 Central Rd	71 2016	Bray's Auto Spares & Accessories
Wagga Wagga	119 Fitzmaurice St	21 4700	Jack Skeer's Cycles
Wagga Wagga	68a Baylis St	21 3962	Schipps Sports Store
Wagga Wagga	107 Fitzmaurice St	21 4474	Cudmore's Cycle Centre
Wyong	Railway St	52 1504	P&G Cycles & Mowers
Weston	9 Brierly St	88 8352	Bionic Bicycles
Walsend	142 Nelson St	55 8740	M. Walker Cycle & Sports
Wollongong	300 Crown St	29 2317	J. A. Spearman
Wollongong	40 Flinders St	28 4853	Alf Overton
Windsor	293 George St	77 3209	Windsor Cycles
Yarralumla	12 Brown St	81 3250	Mr Spokes Bike Hire
Yass	70 Comur St	26 1494	N. J. Kemp

The Benefits of the Bicycle as a Transport Medium

Efficiency

- A bicycle uses less than one quarter the roadspace of a car.
- Twelve bicycles can be parked in the space used by one car.
- A cyclist can travel three times as far as a pedestrian in the same time period for equivalent effort.
- For trips up to 7 km in length in urban areas, door to door travel times by bicycle can be quicker than by public transport or even private car.
- A cyclist transforms energy from food into movement more efficiently than any other form of animal or mechanically powered transport.
- A bicycle only requires 1/70 the materials that it takes to manufacture a car.
- Operating cost per km of a bicycle is 1/5 that of a small car.
- Yearly ownership cost of a bicycle is 1/100 that of a small car.
- Bicycle facilities will reduce the financial loss (to the community and individuals) that is associated with casualties and property damage from collisions between cyclists and motor vehicles.
- On busy streets where bicycle facilities are not provided and cyclists have to use either the roadway or the footpath, then the level of service for motorists and/or pedestrians respectively, can be significantly reduced.

Equity

- Faciltiies for cyclists could be of advantage to the large percentage of the population that are mobility disadvantaged compared to private car owners. The mobility disadvantaged who could benefit from cycle facilities include: those that are too young to drive, adults in households where there is not one car per adult, those that cannot afford a car (Including those who have a car but cannot really afford one and consequently have to forego expenditure on non-transport essentials), and those that cannot afford the fares of public transport.
- Cyclist (and pedestrian) needs have been ignored by massive public investment for motor vehicle facilities. Public expenditure on transport should be equitably distributed and not directed towards satisfying the demands of the car owning minority: It could be argued that at the very least, the monies set aside for transport should be shared in proportion to the percentage of users; ie pedestrians and cyclists should have 3% and 1% respectively of the transport budget spent on them, if not more initially to make up for past neglect.
- Bicycles, and particularly tricycles, can provide a high level of mobility for people suffering from many physical infirmities (this is because of the bicycle's high mechanical efficiency and because much of the weight of the body is supported by the bicycle or tricycle).

Environmental Amenity

- No exhaust fumes.
- Practically no noise.
- A machine of human scale.
- Cycling is by its nature compatible with a clean, quiet uncluttered environment. For many trips cycling can remove noisy and polluting motor vehicles from the urban environment. This potential has been recognised by the USA Environmental Protection Agency, eg bikeways to the CBD are an integral part of the program for air quality improvement in the city of Philadelphia.

Health

- Cycling is one of the best forms of exercise for a wide age range, and
- Cycling is mentally exhilarating.

Safety

- People, particularly children, are already riding bikes on inadequate facilities. The many serious injuries and fatalities could be dramatically reduced by the provision of adequate facilities (as proved in Davis USA and Stevenage GB). The potential safety related benefits are greatly underestimated by official statistics because many injuries are not reported. A bikeway system could greatly reduce the number of accidents experienced by cyclists.

Security

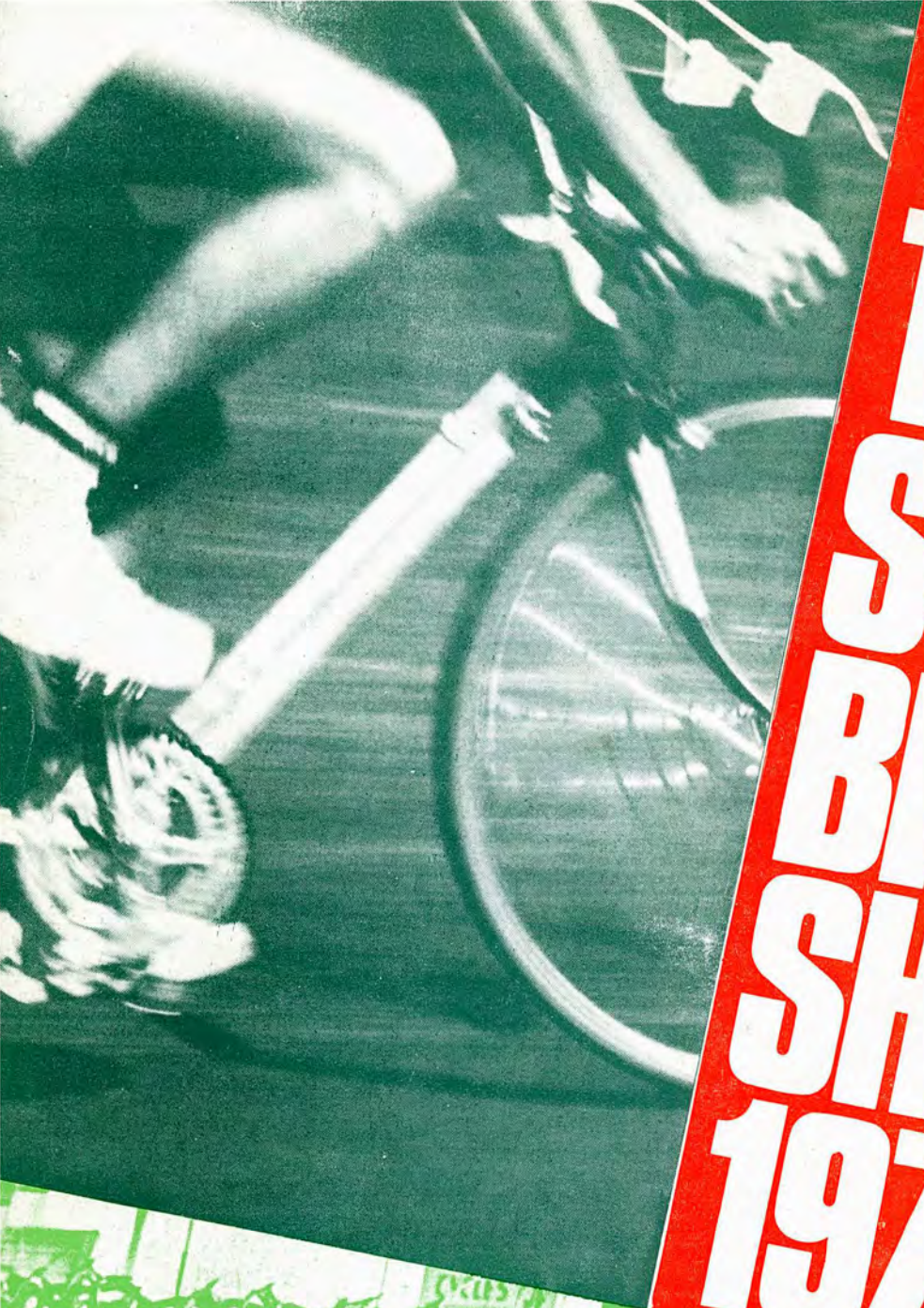
- Secure storage to discourage bicycle theft and vandalism is vital. It is estimated that an individual's bicycle will be stolen, on average, once every ten years.

Utility

- Bicycle transport is a mode of considerable flexibility and utility (eg as demonstrated in China).
- A city over dependent on motorised transport can be very easily crippled, eg by fuel rationing.
- A folding bicycle (eg the Bickerton) that can easily be carried, is probably the most realistic 'vehicle' for dual mode use in conjunction with other motorised modes with more than two wheels.

Community Involvement

- Because of low capital cost and the simple technology of bicycle planning, members of the community can actively participate in bike facility planning. The facilities so planned and implemented, because of their low cost, can be changed if the community wishes.



THE SYDNEY BICYCLE SHOW 1978

Paddington Town Hall March 9-12 1978

- Manufacturers and Importers displays
- Films on cycleways, safety, racing and maintenance
- Frame and wheel building demonstrations
- Speakers on various aspects of cycling, cycle touring and camping equipment
- Roller Racing
- Displays on history of cycling, safety, health aspects and benefits of the bicycle as a viable means of personal transport
- Book shop selling all kinds of books on bicycling
- Food and drink available and a licenced bar adjoins the hall.

Open 4 pm to 9 pm Thursday 9th
9 am to 9 pm Fri., Sat., Sunday
The Bicycle Institute of NSW
399 Pitt St., Sydney 2000